Dom Chu
Architecture
Stage 1-3 Portfolio

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I'm Dom Chu, currently serving as a Part 1 Architectural Assistant at Supervene Architects in Tunbridge Wells, Kent. My expertise lies in both digital and physical model-making, with a keen interest in InDesign. I'm dedicated to enhancing the calibre my models both digital and physical and am actively expanding my skills in BIM modelling. I hold a Bachelor's Degree in Architecture (ARB/RIBA Part 1) from The University for the Creative Arts. In my final year, I was honoured with the Studio Prize for all around achievement and best physical model. Additionally, I was nominated for the 2023 RIBA President's Medals Bronze Medal, recognising my outstanding portfolio. Outside of work, I am passionate about immersing myself in fiction novels and engaging in video games.

Education

2020 - 2023	Canterbury School of Architecture \ UCA
Grade	BA (Hons) Architecture (ARB/RIBA Part 1) \ first class honours
Activities	MULTISTORY* Guest Lecture Series \ assistant Canterbury Architecture School Climate Action Network \ social media assistant

2013 - 2020	The Norton Knatchbull Grammar School
Grade	A-Level product design \ A, fine art \ B, business studies \ D
Activities	Ashford Junction 10 roadworks community project \ mural painting Fine art / product design / form prefect

Experience

2023 - Present	Supervene Architects \ architectural assistant
2019 - Present	Premier Inn \ housekeeper and front desk receptionist

Skills / software proficiency

Architectural design
Model making

Rhinoceros A CAD Id Ps

Honours

2023	RIBA Bronze Medal nominee \ the urban cultivation canteen
2023	Stage 3 studio prize \ all-round achievement and best model

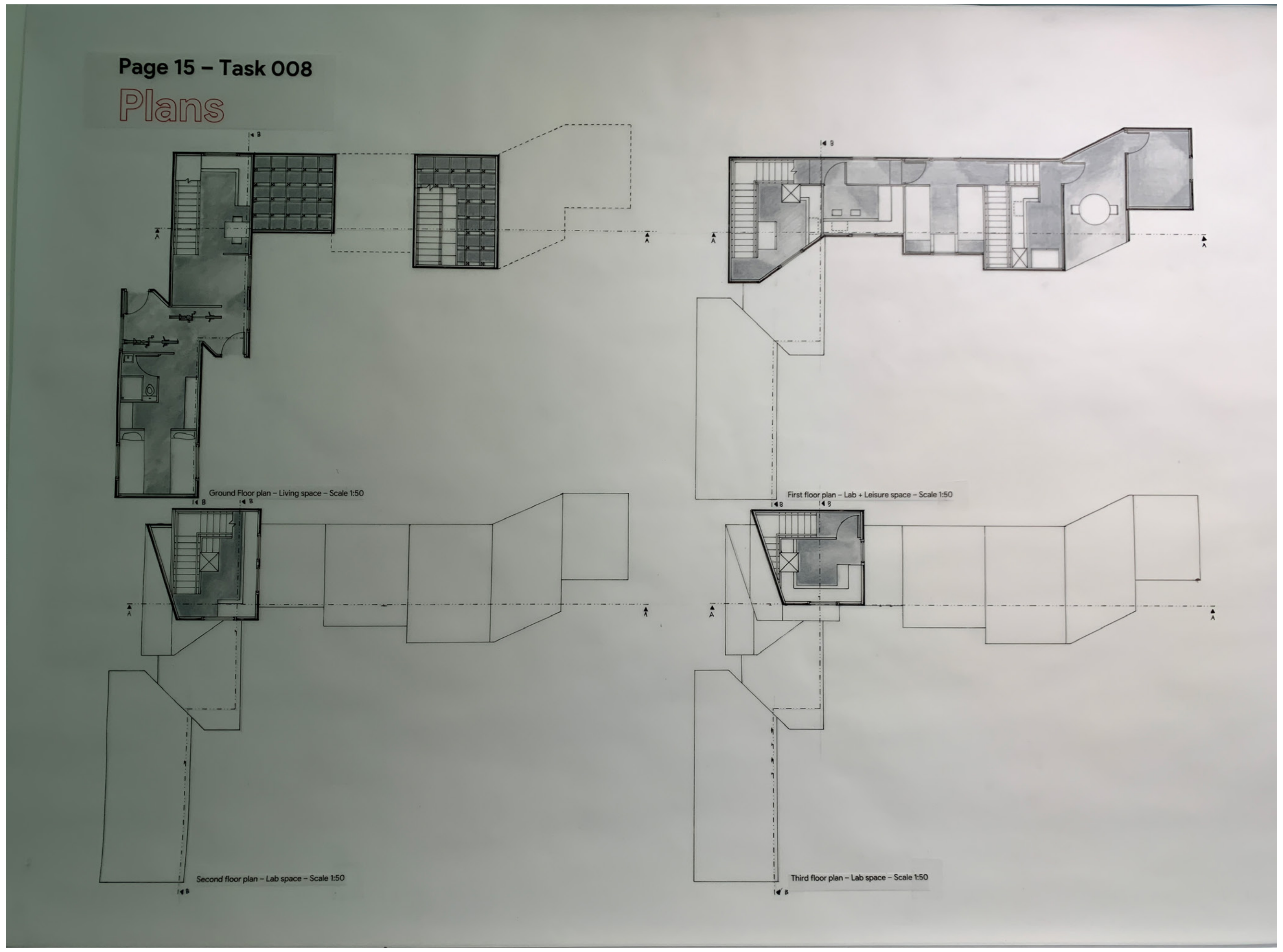
Languages

English	Native proficiency
Cantonese	Professional working proficiency (speaking and listening)

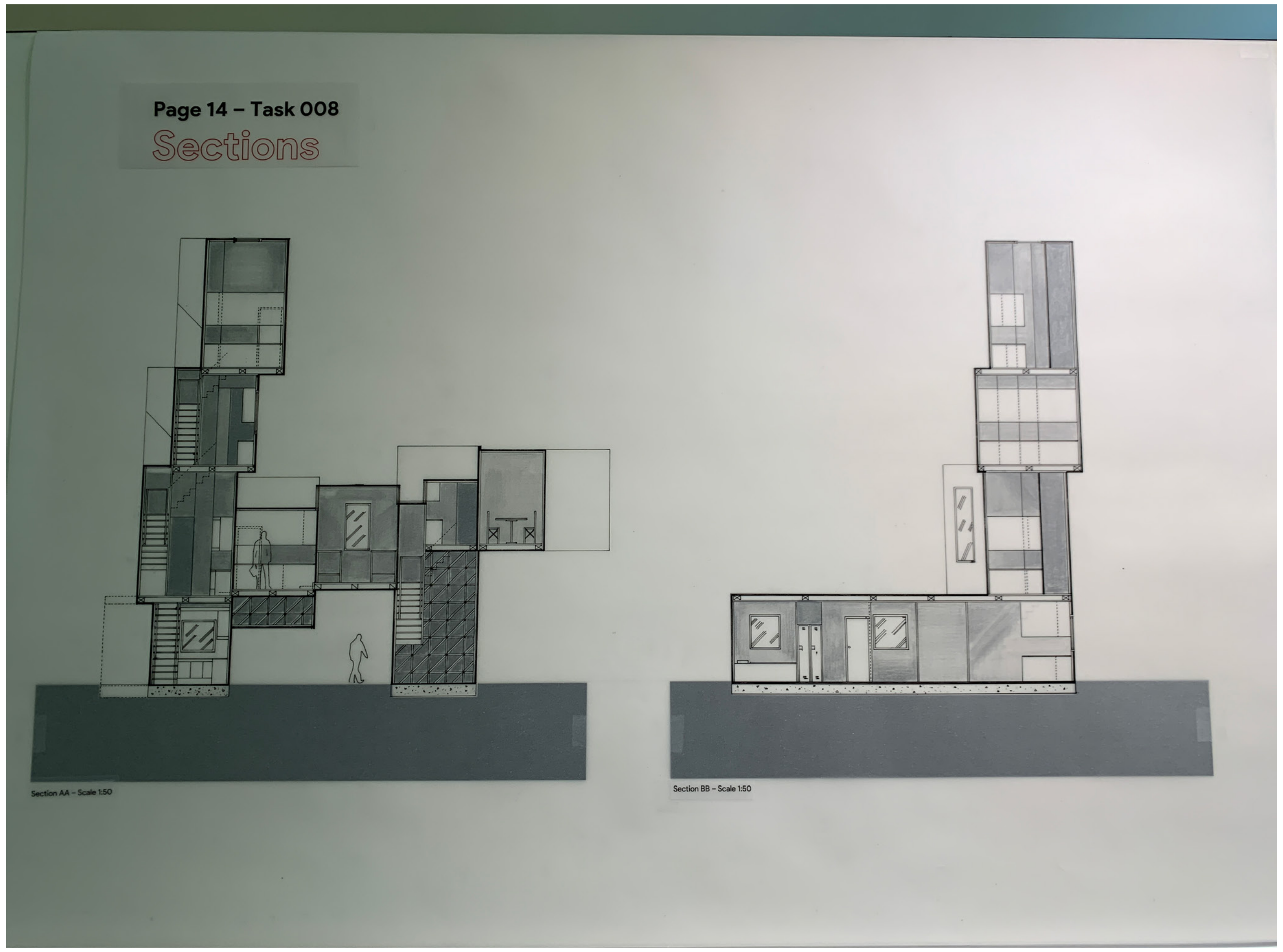
Container Housing for Geologist / Taxidermist

The project brief was to design a housing scheme using three standard shipping containers, based on the requirements of the client's profession and hobby.

My client's profession was a taxidermist and their hobby was geology. The building form is derived from my massing studies where each iteration was based on a 'verb', and the design is based on 'fracture'.

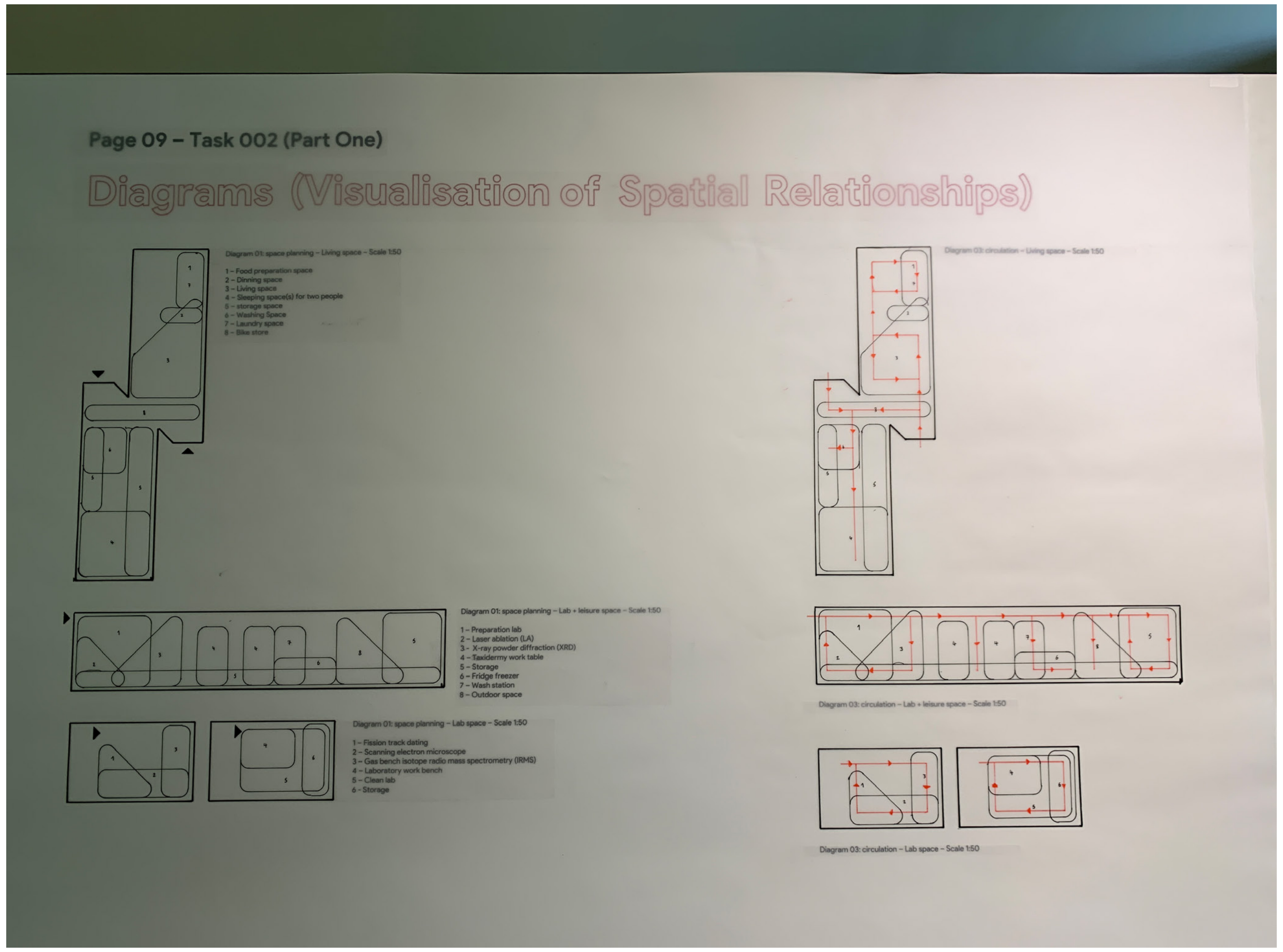

Page 15 – Task 008
Plans
Ground Floor plan – Living space – Scale 1:50
First floor plan – Lab + Leisure space – Scale 1:50
Second floor plan – Lab space – Scale 1:50
Third floor plan – Lab space – Scale 1:50
A
B

Plans



Sections

Selected Works



Page 09 – Task 002 (Part One)

Diagrams (Visualisation of Spatial Relationships)

Diagram 01: space planning – Living space – Scale 1:50

1 – Food preparation space
2 – Dinning space
3 – Living space
4 – Sleeping space(s) for two people
5 – storage space
6 – Washing Space
7 – Laundry space
8 – Bike store

Diagram 03: circulation – Living space – Scale 1:50

Diagram 01: space planning – Lab + leisure space – Scale 1:50

1 – Preparation lab
2 – Laser ablation (LA)
3 - X-ray powder diffraction (XRD)
4 – Taxidermy work table
5 – Storage
6 – Fridge freezer
7 – Wash station
8 – Outdoor space

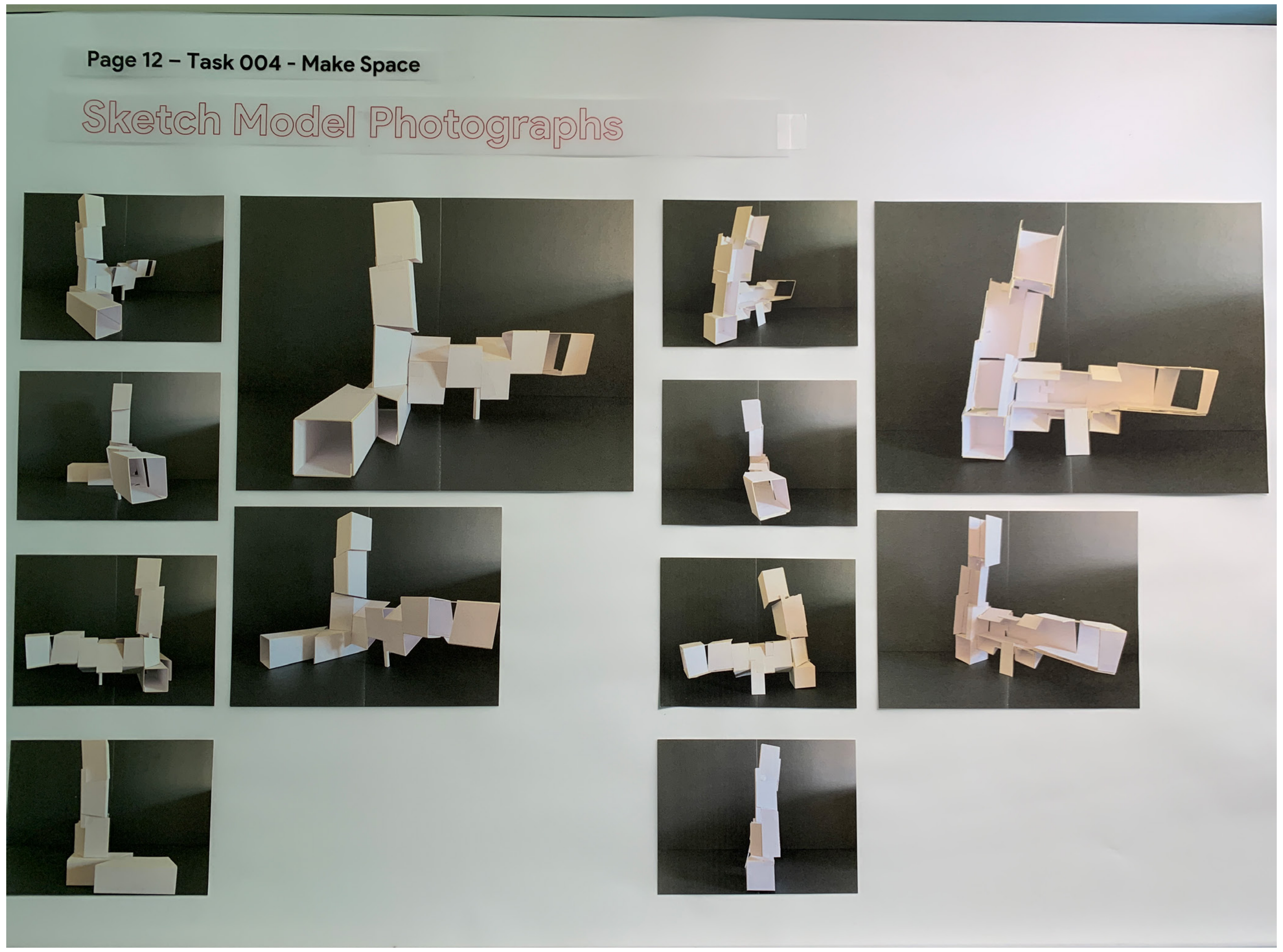
Diagram 03: circulation – Lab + leisure space – Scale 1:50

Diagram 01: space planning – Lab space – Scale 1:50

1 – Fission track dating
2 – Scanning electron microscope
3 – Gas bench isotope radio mass spectrometry (IRMS)
4 – Laboratory work bench
5 – Clean lab
6 - Storage

Diagram 03: circulation – Lab space – Scale 1:50

Spatial and circulation diagrams

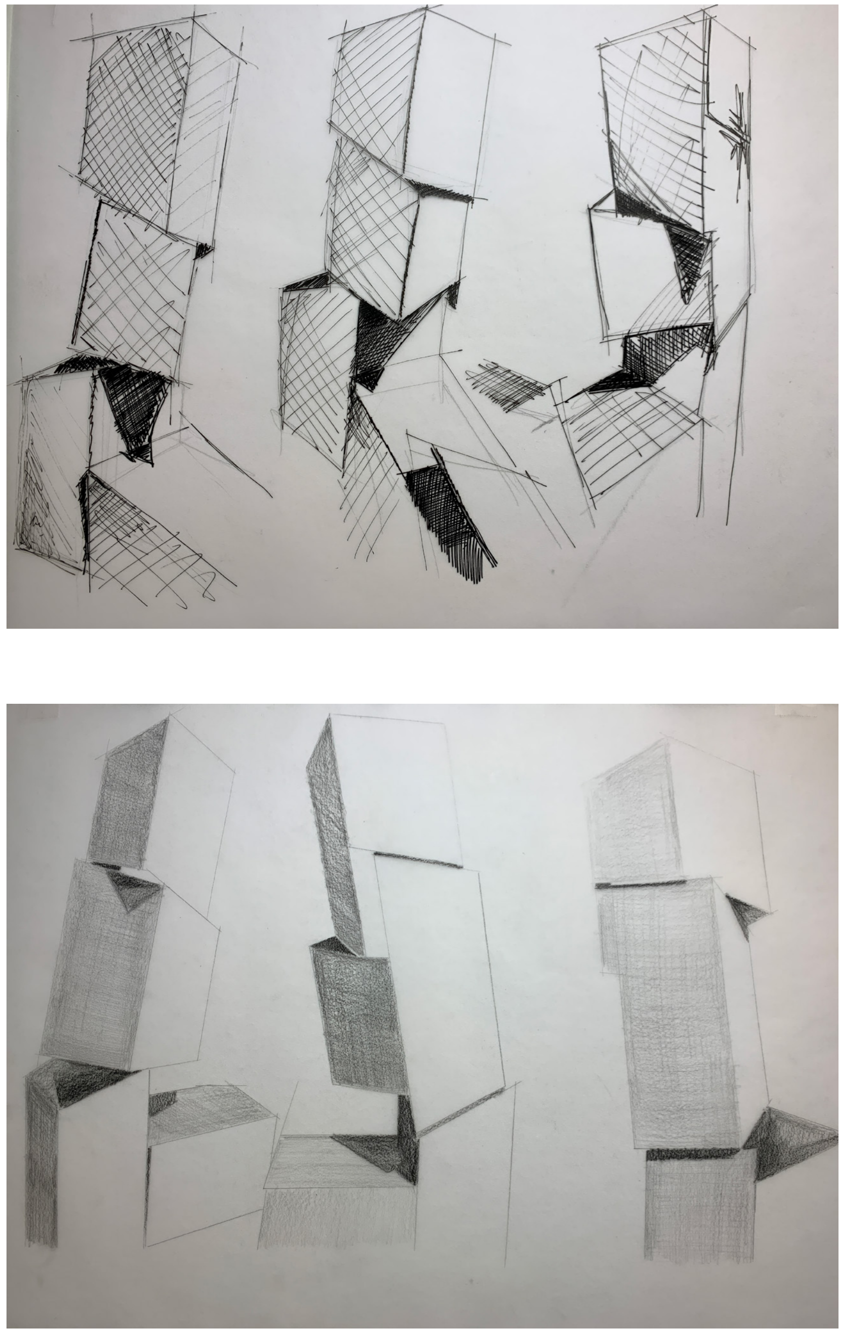


Page 12 – Task 004 - Make Space

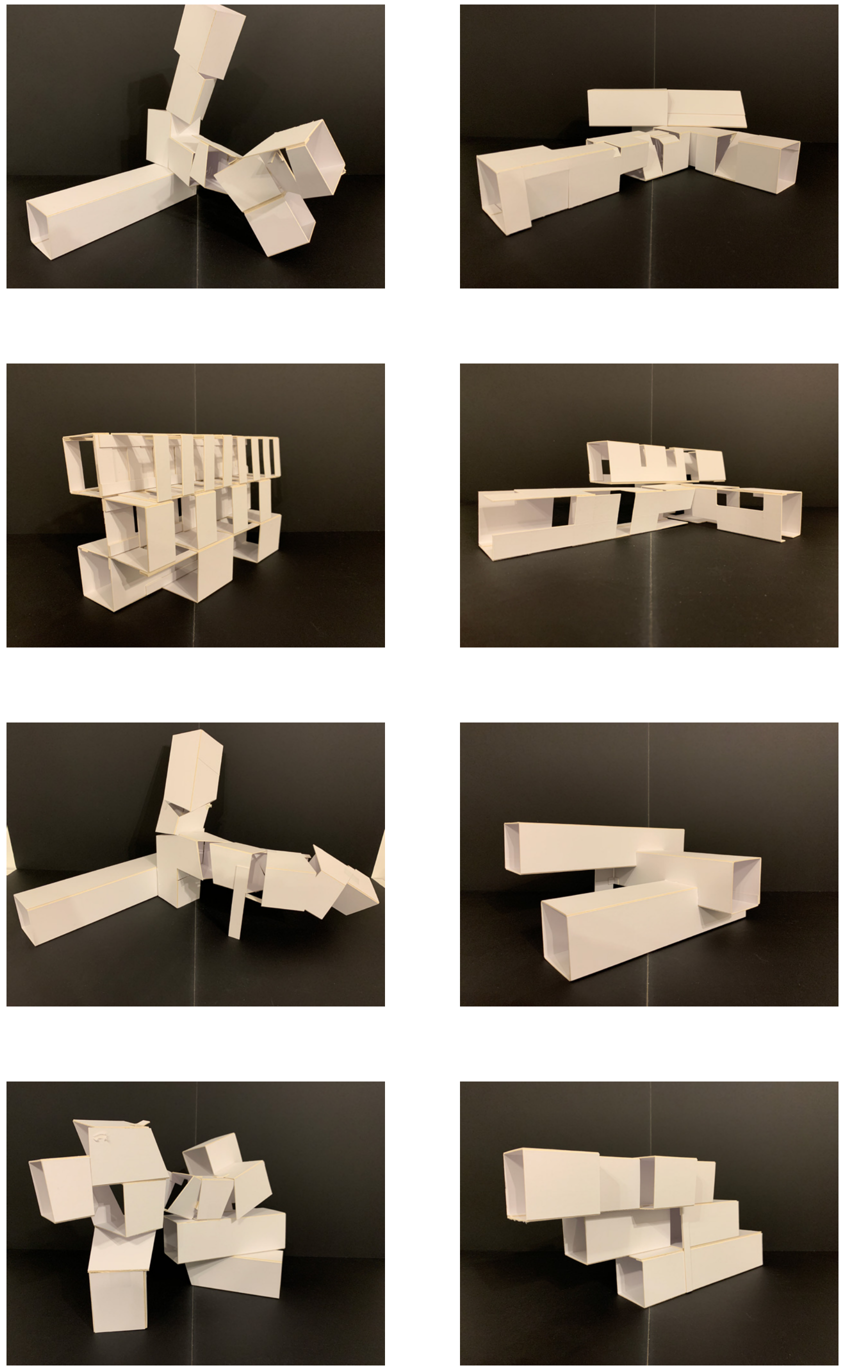
Sketch Model Photographs

Final model

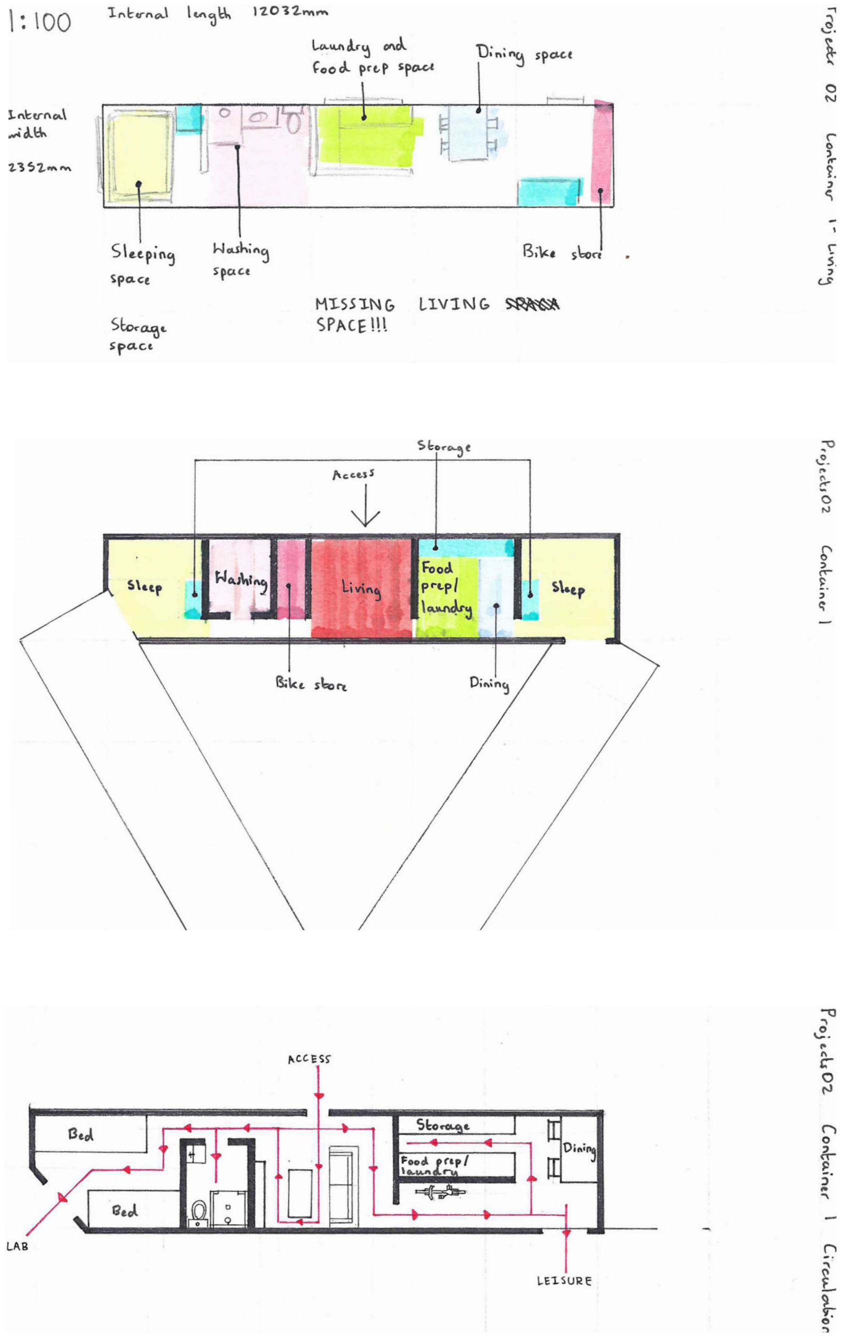
Work-In-Progress



Sketches of the external



Massing models

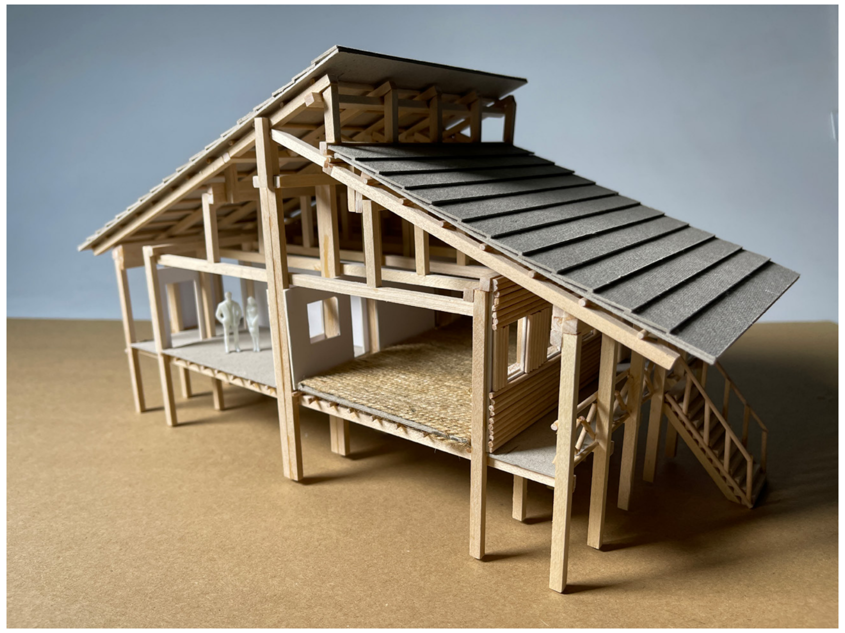


Programme and circulation diagrams

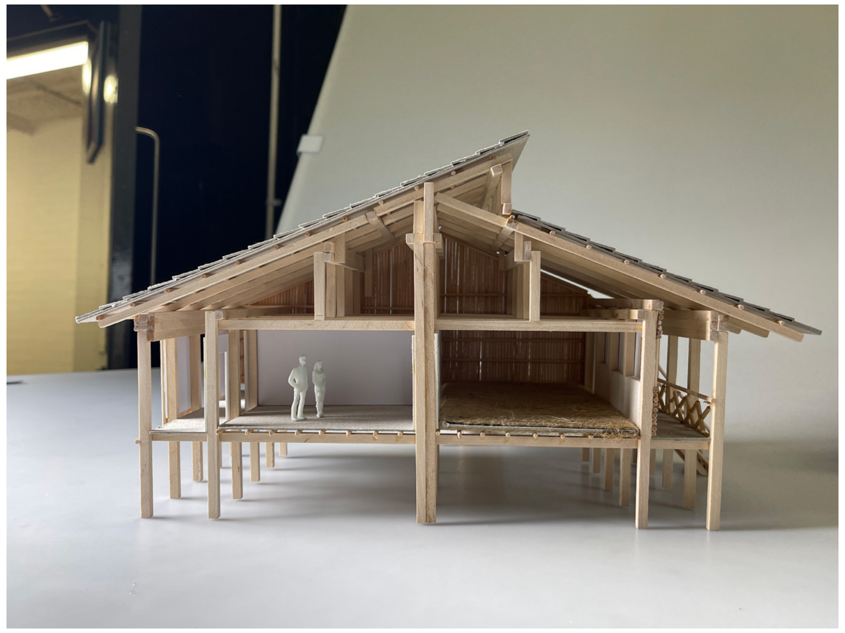
stage 1 \ technology 02 \ vernacular architecture

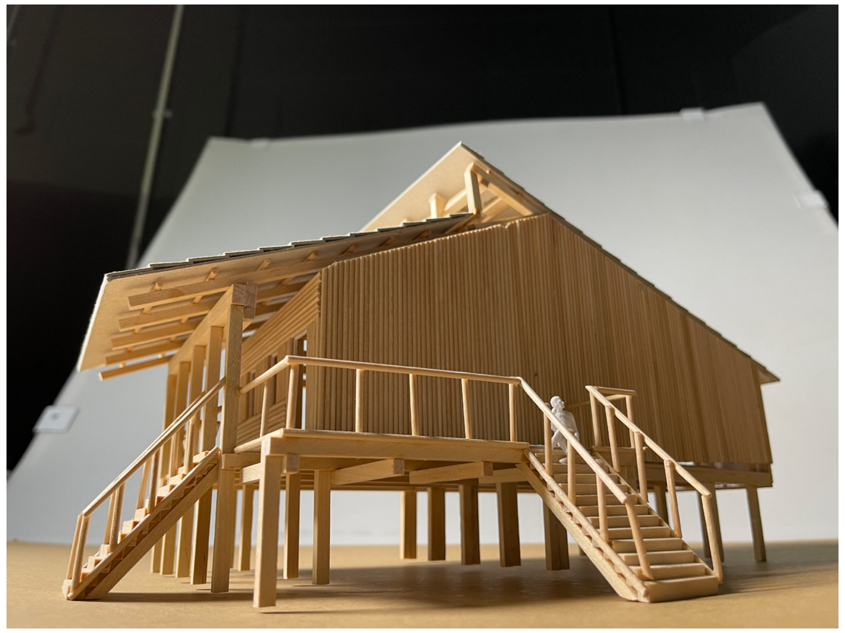
Borneo Longhouse

The project brief was to create five posters showing the technology of an assigned building case study. This was done in groups of four, and we were assigned the Borneo Longhouse.



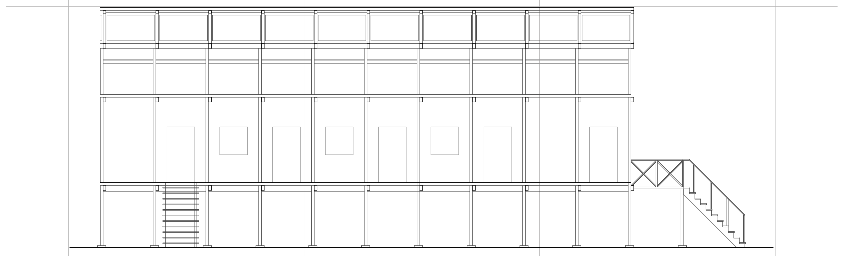
1:50 section model



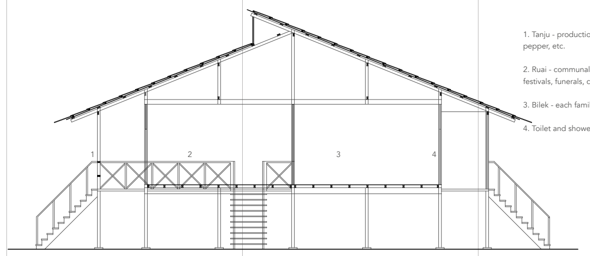


Selected Works

Siting and Form ∨



Longitudinal Section
Scale 1:100



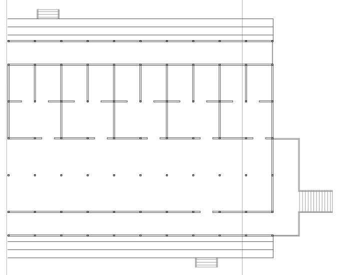
1. Tanju - production area, drying clothes, rice, pepper, etc.

2. Ruai - communal space for gatherings, meetings, festivals, funerals, ceremonies, etc.

3. Bilek - each family's sleeping/living room.

4. Toilet and shower

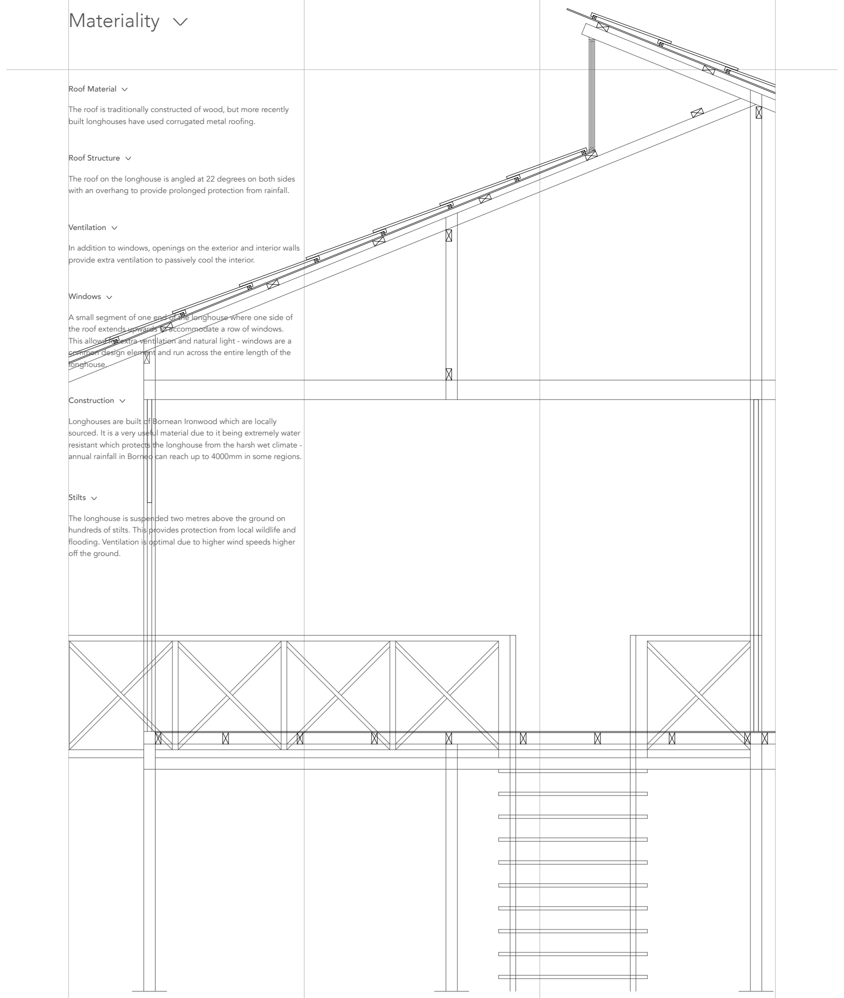
Transverse Section
Scale 1:100



Ground Floor Plan
Scale 1:200

Sections and plan

Materiality ∨



Roof Material ∨

The roof is traditionally constructed of wood, but more recently built longhouses have used corrugated metal roofing.

Roof Structure ∨

The roof on the longhouse is angled at 22 degrees on both sides with an overhang to provide prolonged protection from rainfall.

Ventilation ∨

In addition to windows, openings on the exterior and interior walls provide extra ventilation to passively cool the interior.

Windows ∨

A small segment of one end of the longhouse where one side of the roof extends upwards to accommodate a row of windows. This allows for extra ventilation and natural light - windows are a common design element and run across the entire length of the longhouse.

Construction ∨

Longhouses are built of Bornean Ironwood which are locally sourced. It is a very useful material due to it being extremely water resistant which protects the longhouse from the harsh wet climate - annual rainfall in Borneo can reach up to 4000mm in some regions.

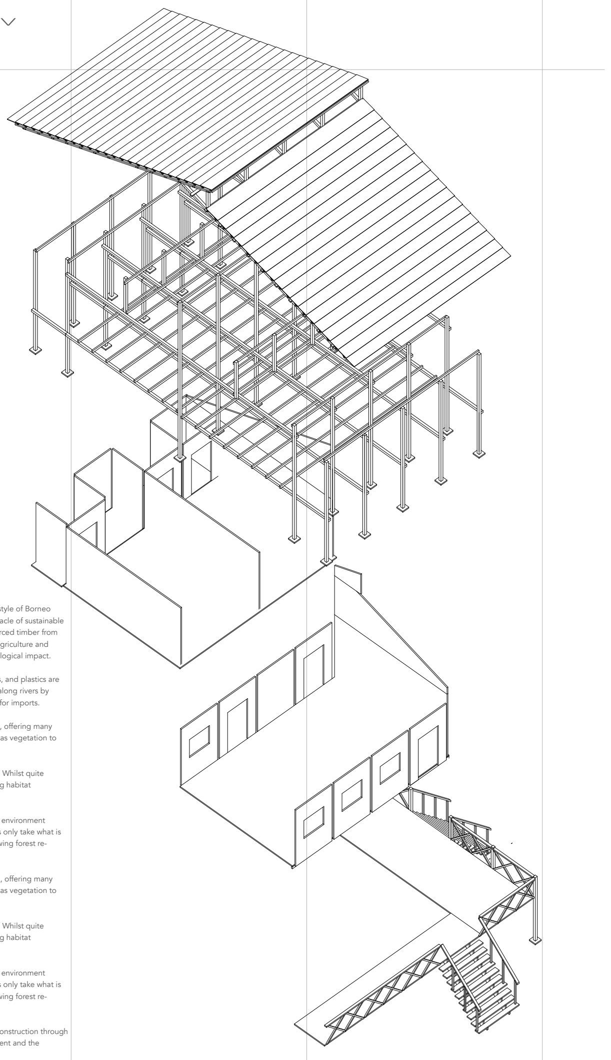
Stilts ∨

The longhouse is suspended two metres above the ground on hundreds of stilts. This provides protection from local wildlife and flooding. Ventilation is optimal due to higher wind speeds higher off the ground.

Transverse Section
Scale 1:25

Detailed section

Critical Reflection ∨



Roof Structure ∨

Consequences of the remoteness and rural lifestyle of Borneo tribes, vernacular style longhouses are the pinnacle of sustainable housing. The use of scrap materials, locally sourced timber from one of the most diverse ecosystems on earth, agriculture and symbiosis allows this structure to have little ecological impact.

Scrap materials such as metal sheets, adhesives, and plastics are imported from tourism, which needs transport along rivers by boats, creating a net 0 on the carbon footprint for imports.

Locally sourced timber is abundant and diverse, offering many types of wood choices for construction, as well as vegetation to bind buildings together.

Agriculture dominates methods to obtain food. Whilst quite ineffective, it doesn't impact the already existing habitat surrounding longhouses of the vernacular type.

The symbiosis between tribe members and the environment prevents a parasitic relationship; tribe members only take what is necessary, whilst maintaining ecologies by allowing forest re-growth.

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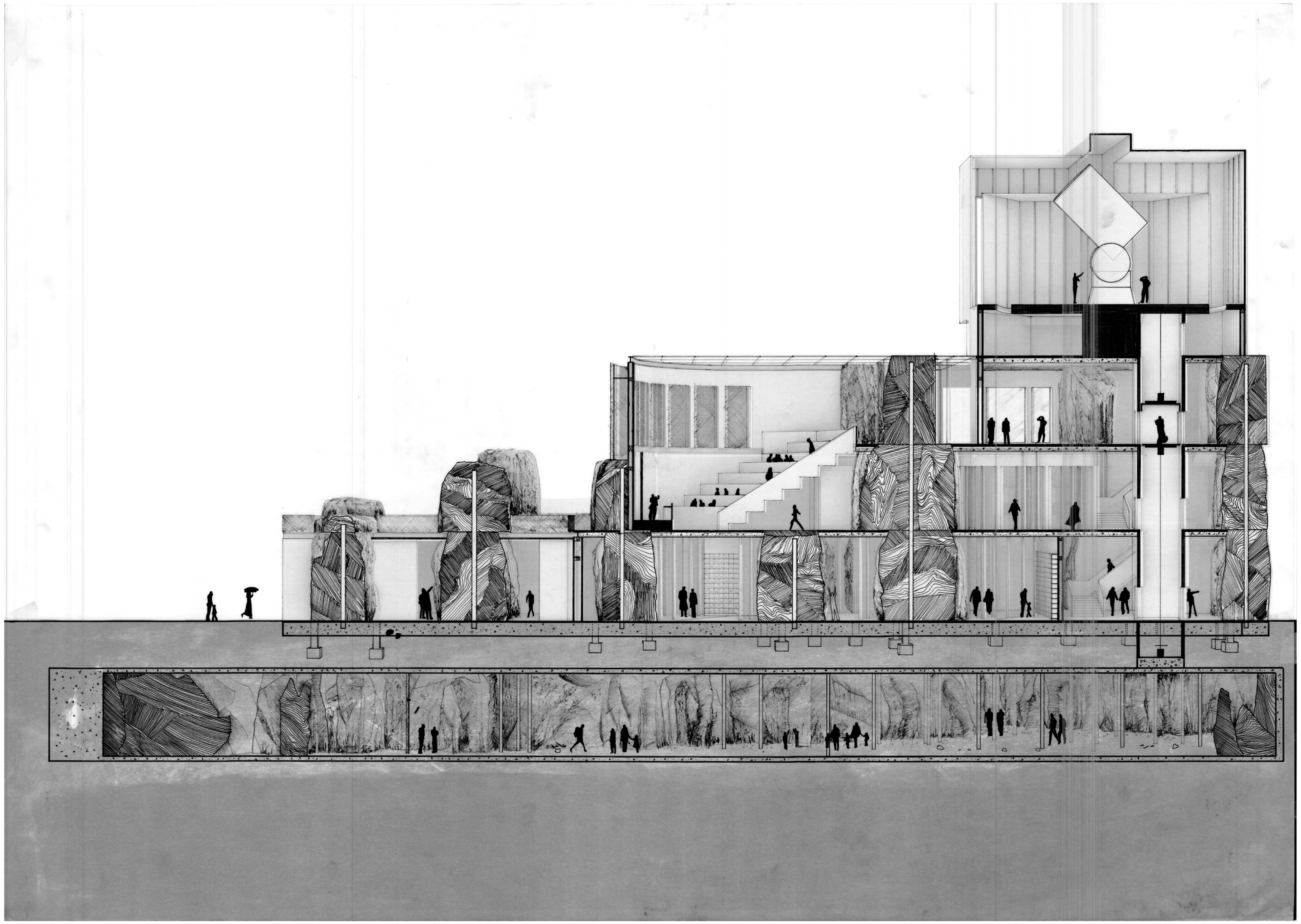
Educating vernacular, sustainable methods of construction through different uses of materials, as well as management and the

Exploded structural axonometric diagram

Centre of Combined Geology and Astronomy

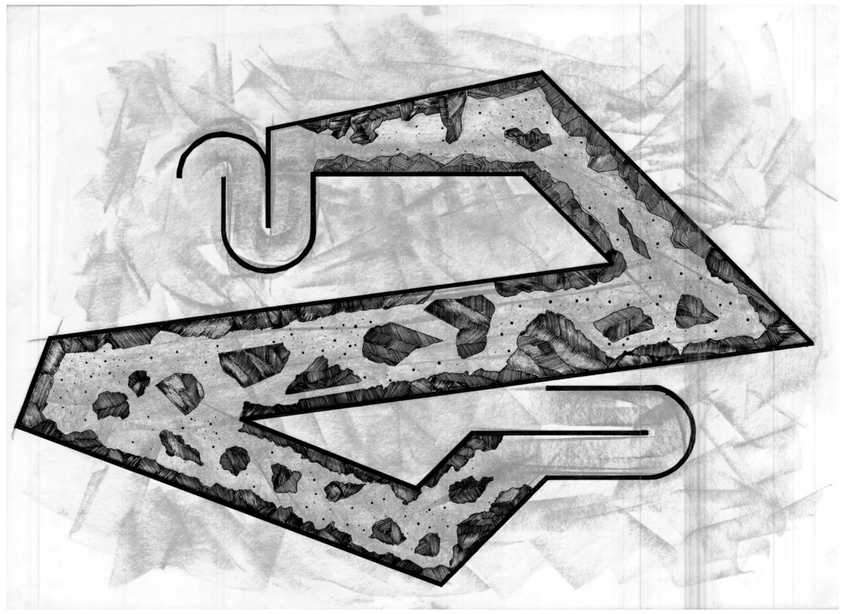
The project brief was a building that archives something. My building fundamentally archives rocks, they are part of the building's structure, scattered across the building as collections, and are part of the geology research conducted within the building.

Part of the narrative is that the geological composition of the Earth is forever changing, over the billions of years there have been many states in its composition. The building 'archives' this in the form of a underground tunnel, as people traverse the tunnel, its rock composition changes to match the composition of the Earth with the tunnel length relative to the years the Earth has since formed.

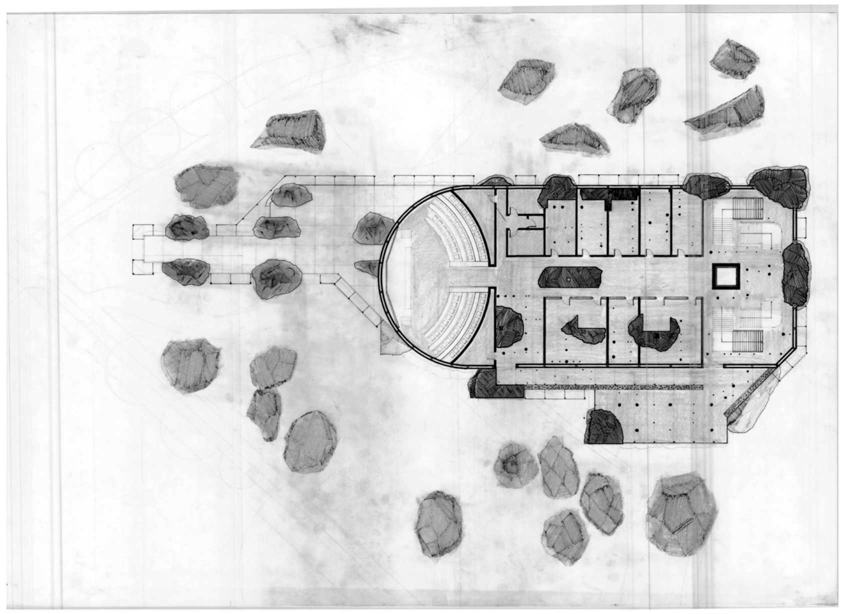


Longitudinal section

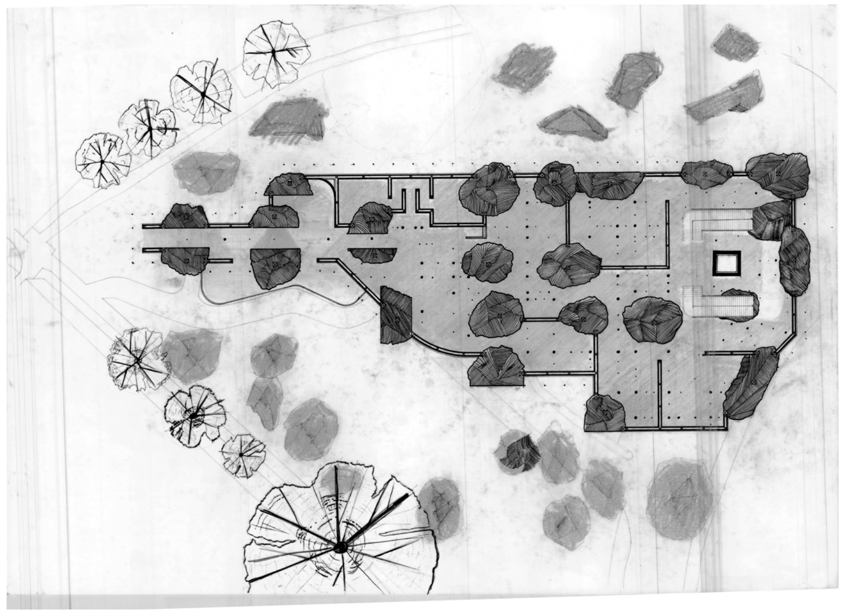
Selected Works



Basement plan

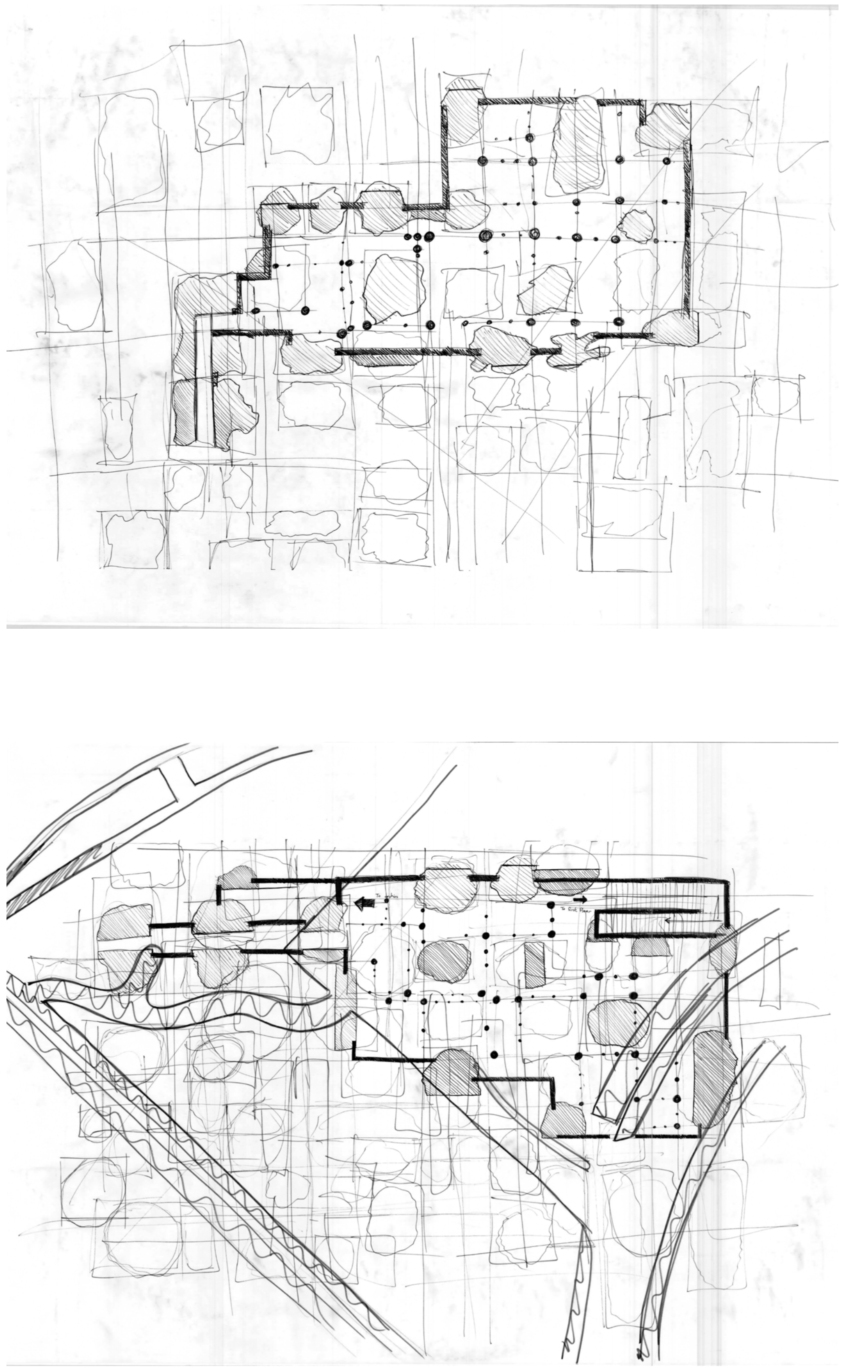


Ground plan



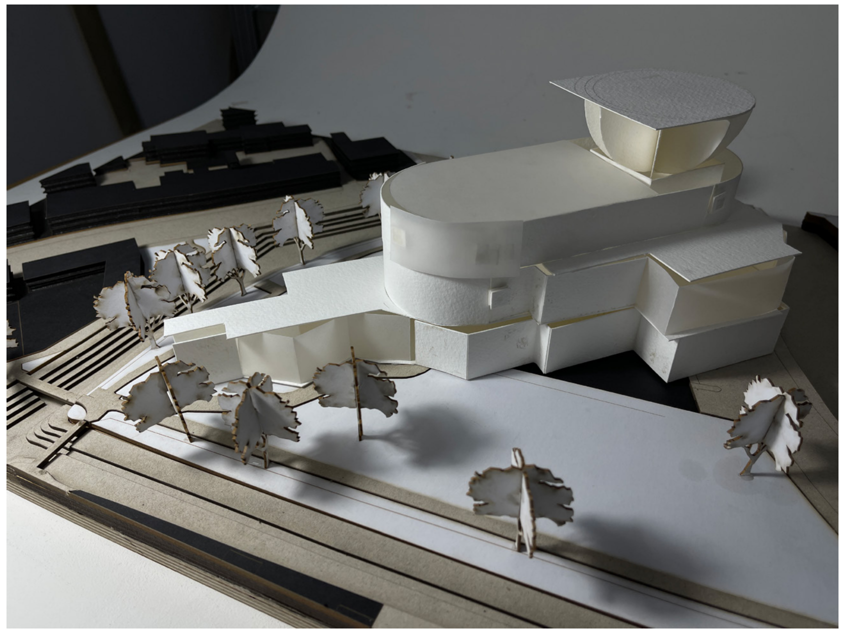
First floor plan

Work-In-Progress

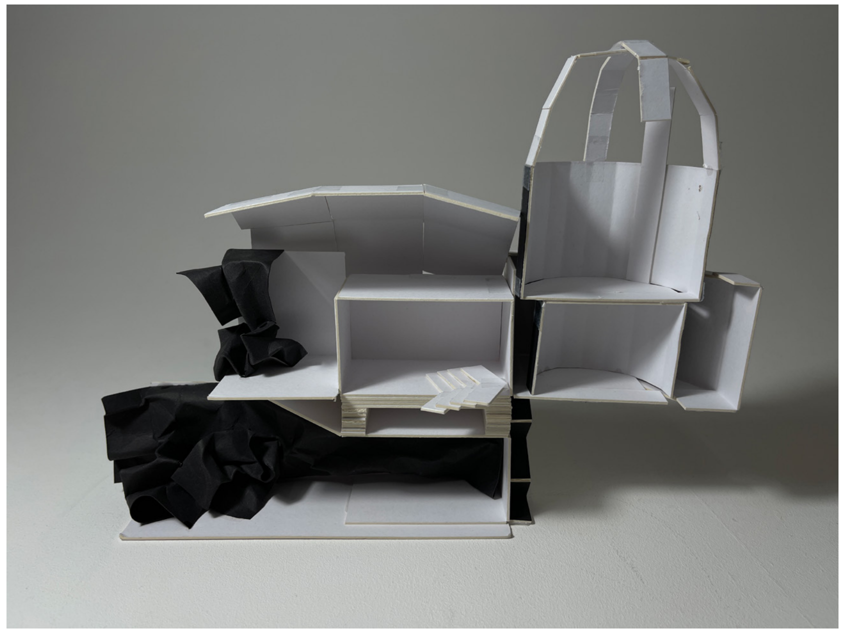


Concept design through 'rock mappings'

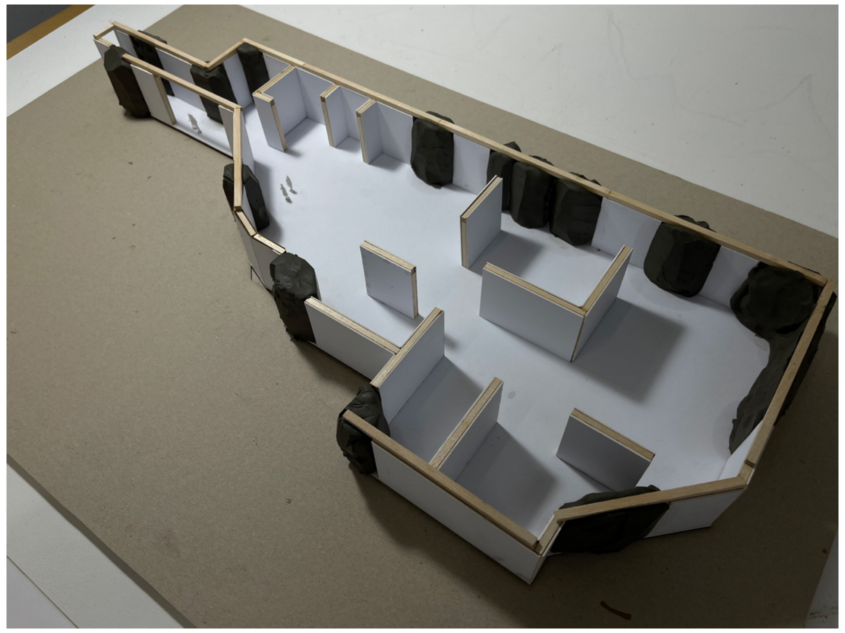
Massing models



1:200 site model with building

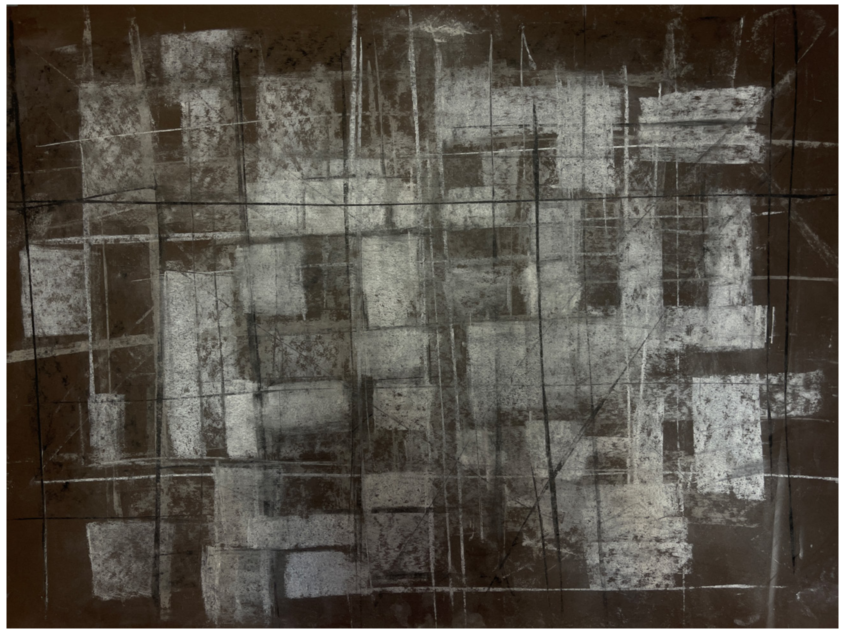


Conceptual section model

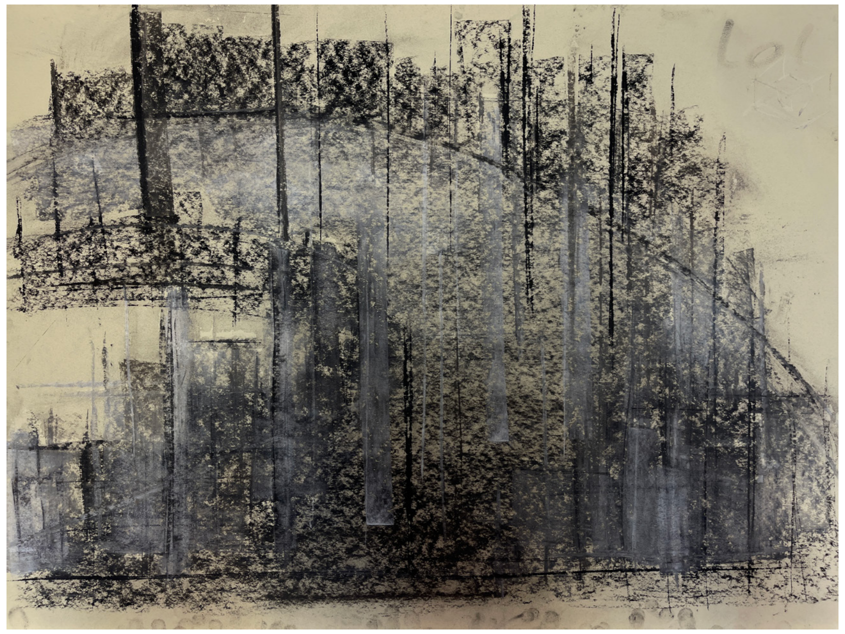


Final model ground floor level

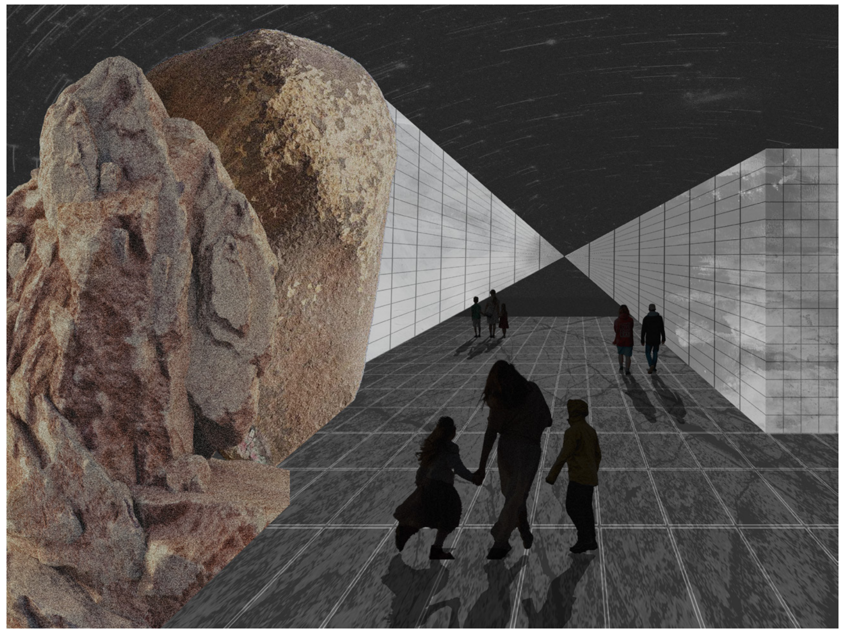
Work-In-Progress



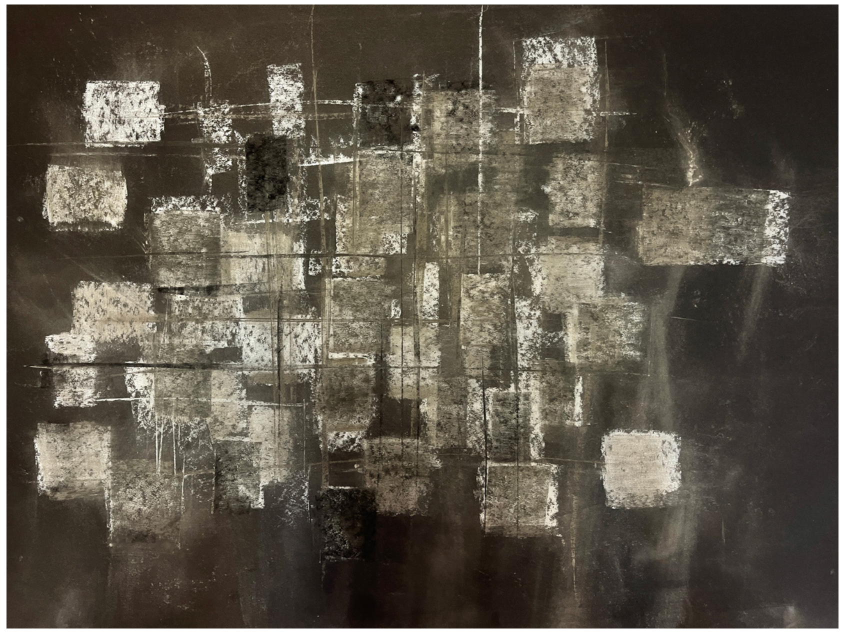
Rock Mapping 01



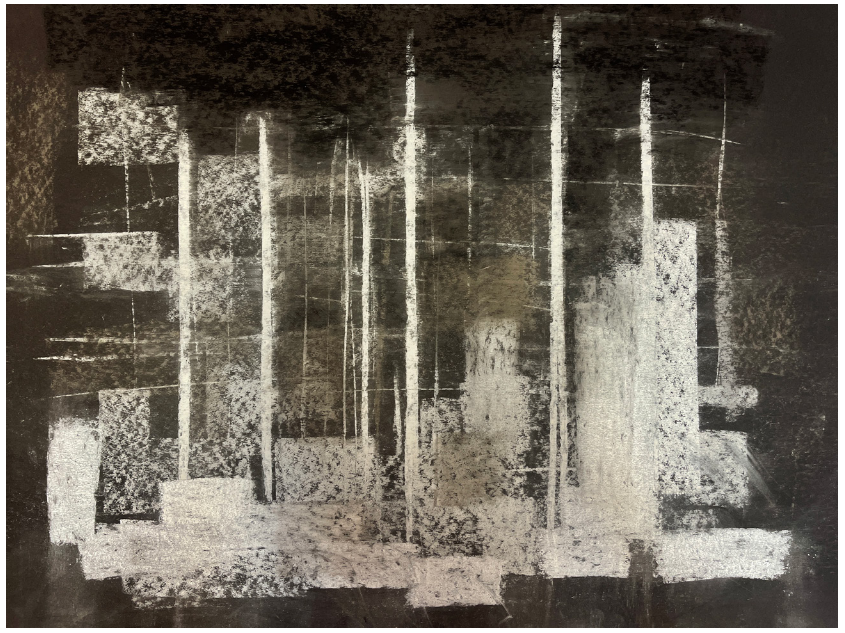
Conceptual interior drawing 01



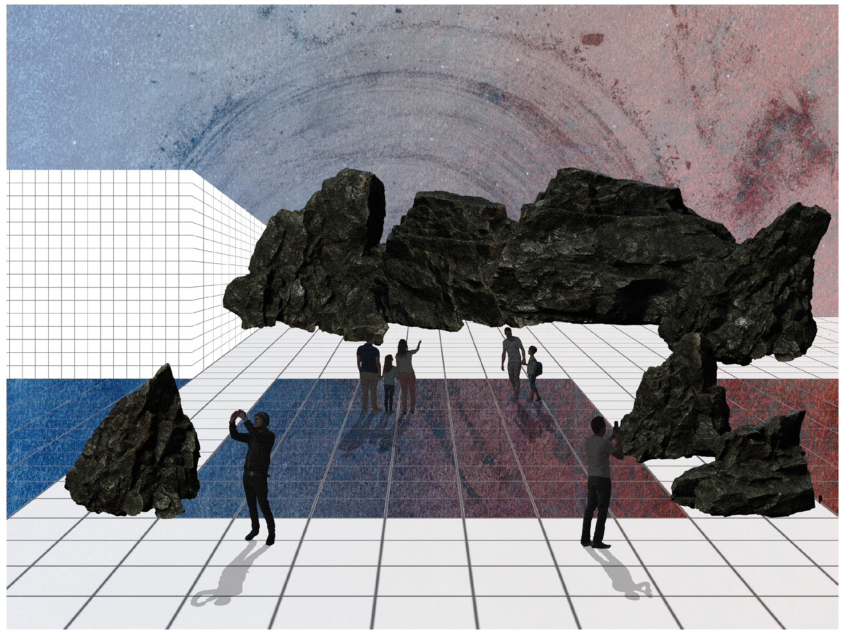
Conceptual interior collage 01



Rock Mapping 02



Conceptual interior drawing 02

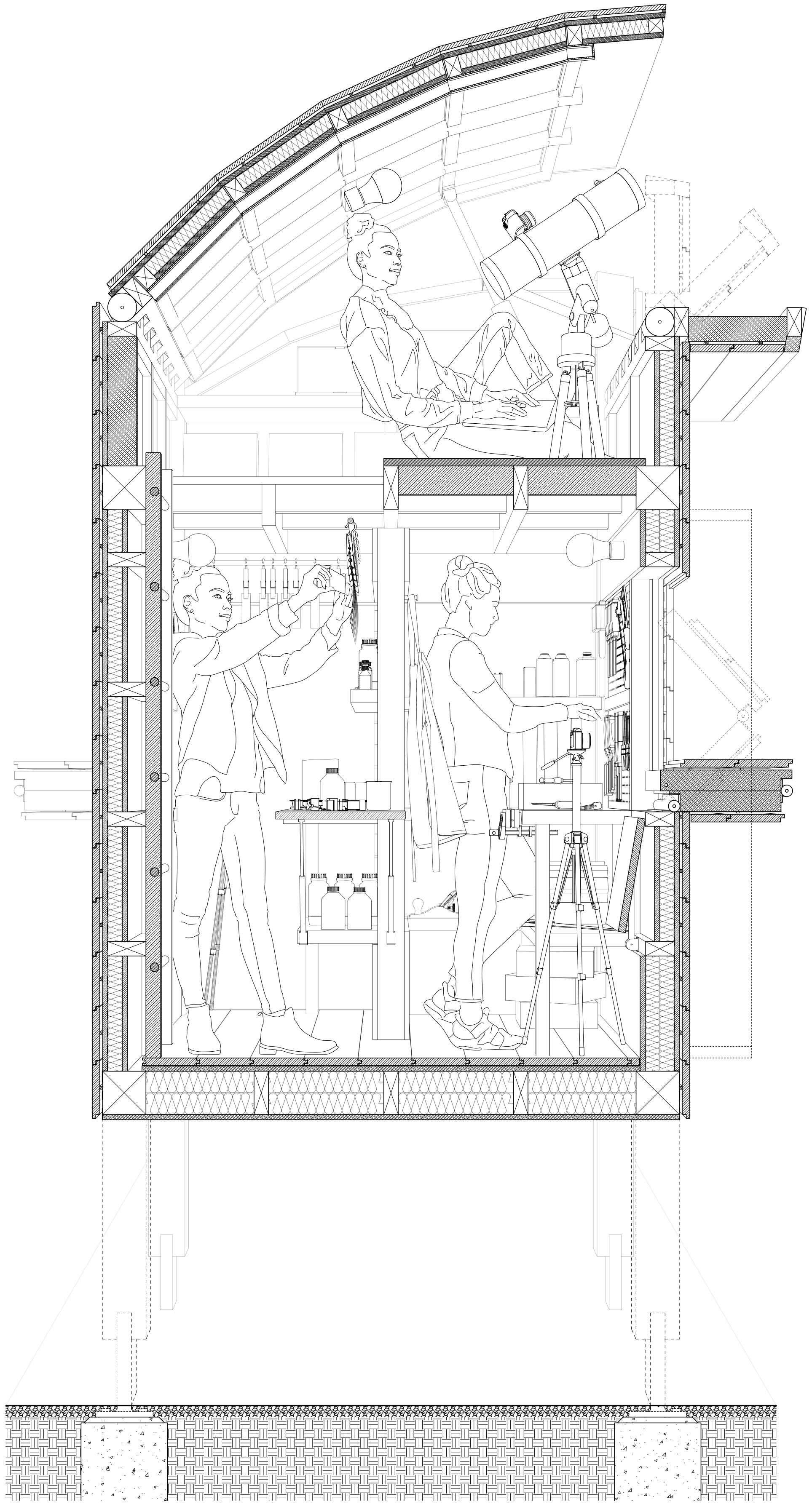


Conceptual interior collage 02

Film + Astrophotography + Wood Carving

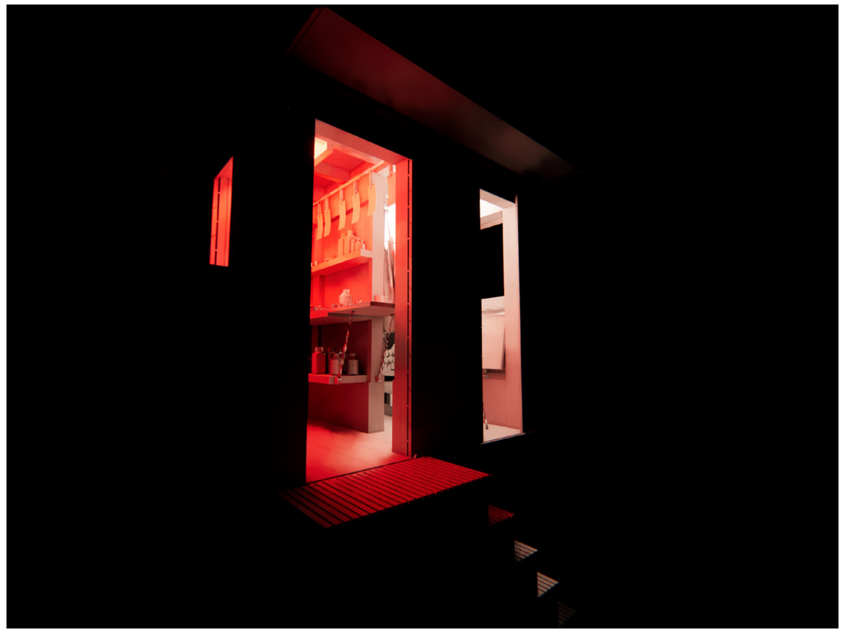
The project brief was to design a space-dense outpost for a 'maker' with a hobby involving crafting/making, which would dictate the design.

My maker was someone with multiple hobbies: astrology, film photography, and wood carving. This was formed into a linear crafting process where the maker would photograph celestial bodies in the night sky using film, develop the film in the darkroom, and use it as a reference to carve the photograph into a piece of wood.



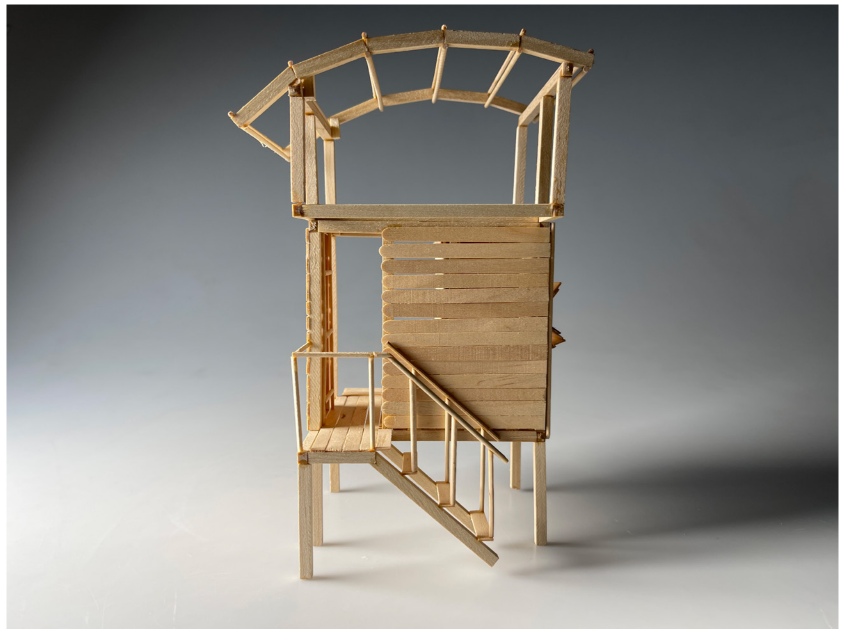
Perspective section

Selected Works



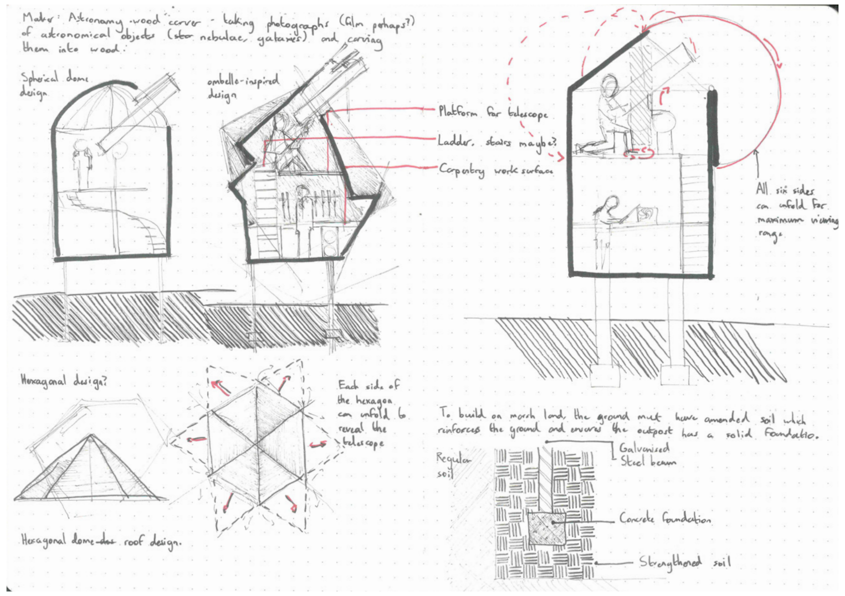
Exterior view

1:50 model interior view



1:50 model front view

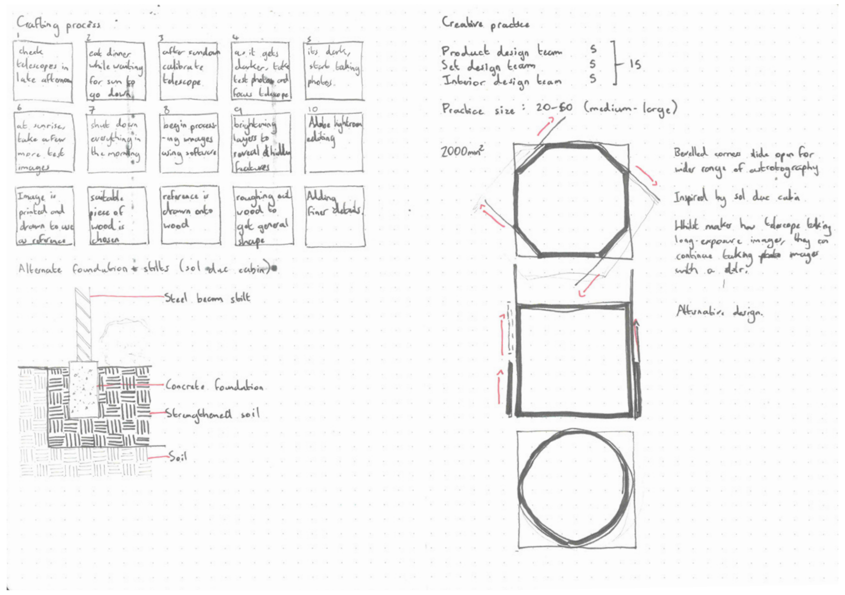
Work-In-Progress



Maker: Astronomy wood carver - taking photographs (film perhaps?) of astronomical objects (star nebulae, galaxies) and carving them into wood.

To build on marsh land, the ground must have amended soil which reinforces the ground and ensures the outpost has a solid foundation.

Spatial Organisation



Crafting process

1 check telescopes in late afternoon
2 eat dinner while waiting for sun to go down
3 after sundown calibrate telescope
4 as it gets darker, take test photos and focus telescope
5 its dark, start taking photos.
6 at sunrise, take a few more test images
7 shut down everything in the morning
8 begin processing images using software
9 brightening layers to reveal hidden features
10 Adobe lightroom editing

Image is printed and drawn to use as reference
suitable piece of wood is chosen
reference is drawn onto wood
roughing out wood to get general shape
Adding finer details.

Alternate foundation + stilts (sol duc cabin)

Creative practice

Product design team 5
Set design team 5
Interior design team 5
} 15

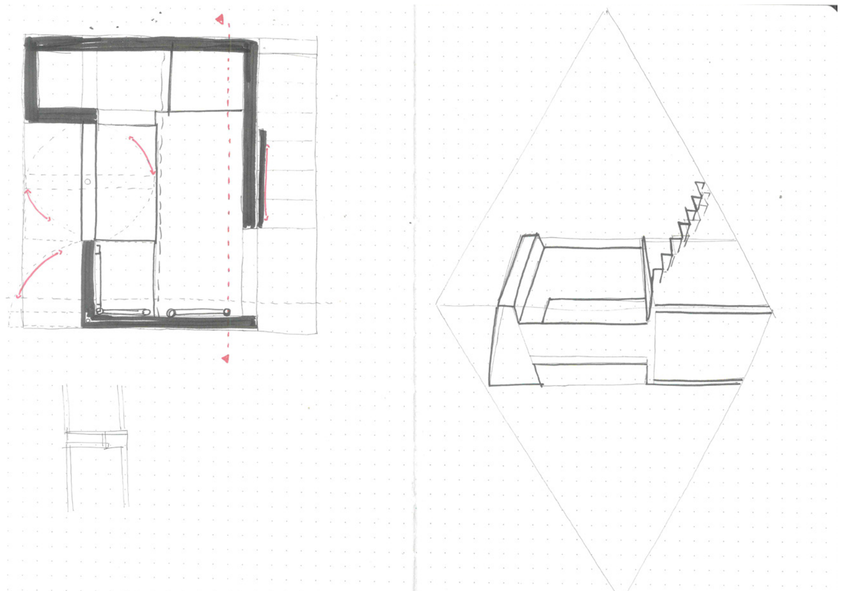
Practice size : 20-50 (medium-large)

Bevelled corners slide open for wider range of astrotography

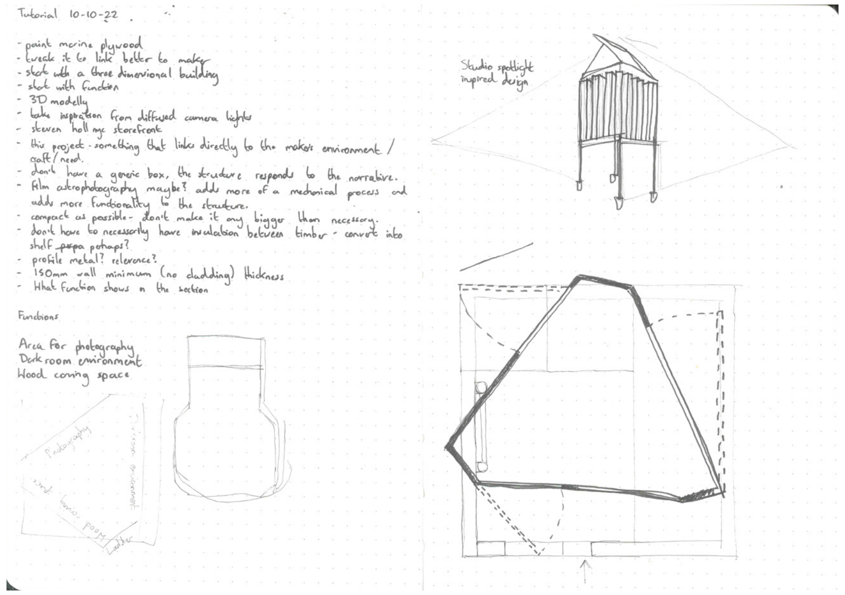
Inspired by sol duc cabin

Whilst maker has telescope taking long-exposure images, they can continue taking ~~photo~~ images with a dslr.

Storyboarding and Outpost Shape Iterations



Draft Plan and Perspective



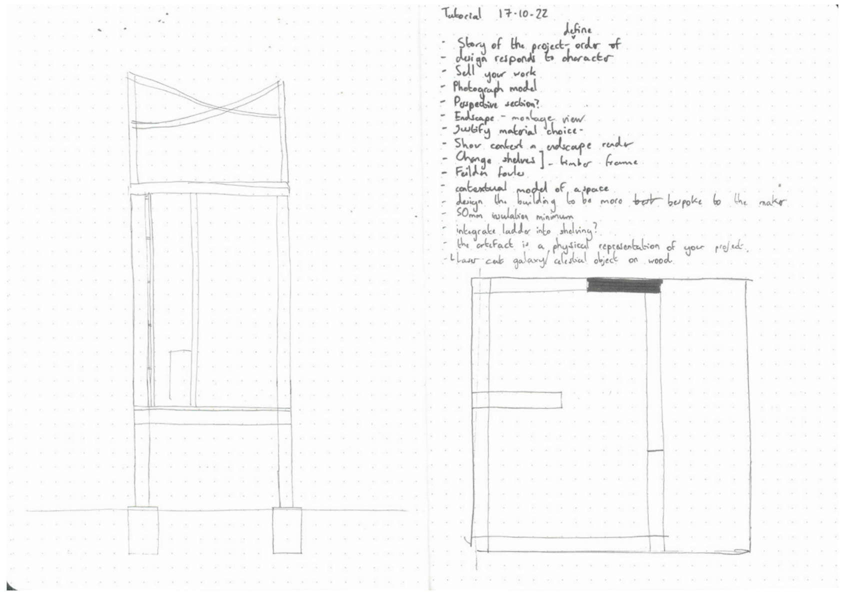
Tutorial 10-10-22

- paint marine plywood
- tweak it to link better to maker
- start with a three dimensional building
- start with function
- 3D modelly
- take inspiration from diffused camera lights
- steven holl nyc storefront
- this project - something that links directly to the maker's environment / craft / need.
- don't have a generic box, the structure responds to the narrative.
- film astrophotography maybe? adds more of a mechanical process and adds more functionality to the structure.
- compact as possible - don't make it any bigger than necessary.
- don't have to necessarily have insulation between timber - convert into shelf ~~perpa~~ perhaps?
- profile metal? relevance?
- 150mm wall minimum (no cladding) thickness
- What function shows on the section

Functions

Area for photography
Dark room environment
Wood carving space

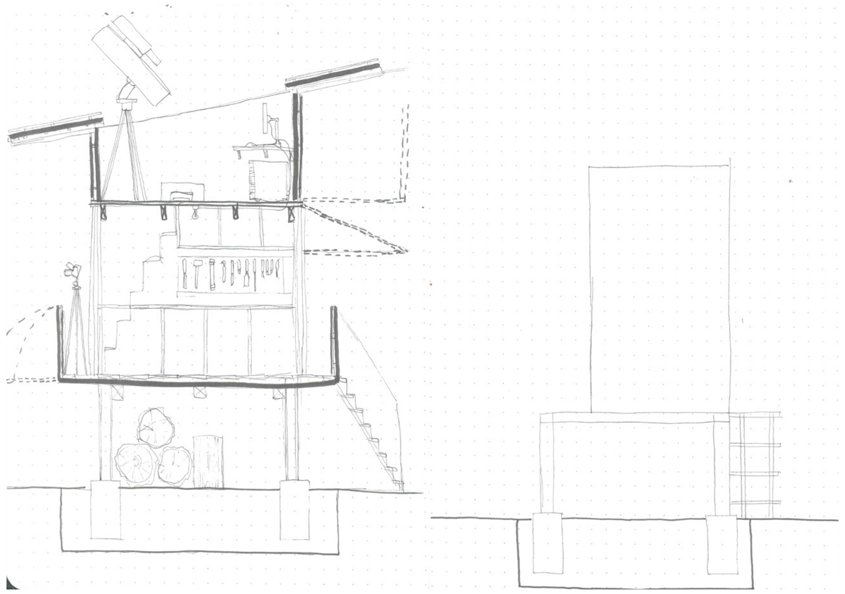
Draft Plan and Perspective



Tutorial 17-10-22

- Story of the project - define order of
- design responds to character
- Sell your work
- Photograph model
- Perspective section?
- Endscape - montage view
- Justify material choice -
- Show context in endscape render
- Change shelves] - timber frame
- Feilden fowles
- contextual model of a space
- design the building to be more ~~best~~ bespoke to the maker
- 50mm insulation minimum
- integrate ladder into shelving?
- the artifact is a physical representation of your project.
- Laser cut galaxy/ celestial object on wood.

Draft Plan and Section

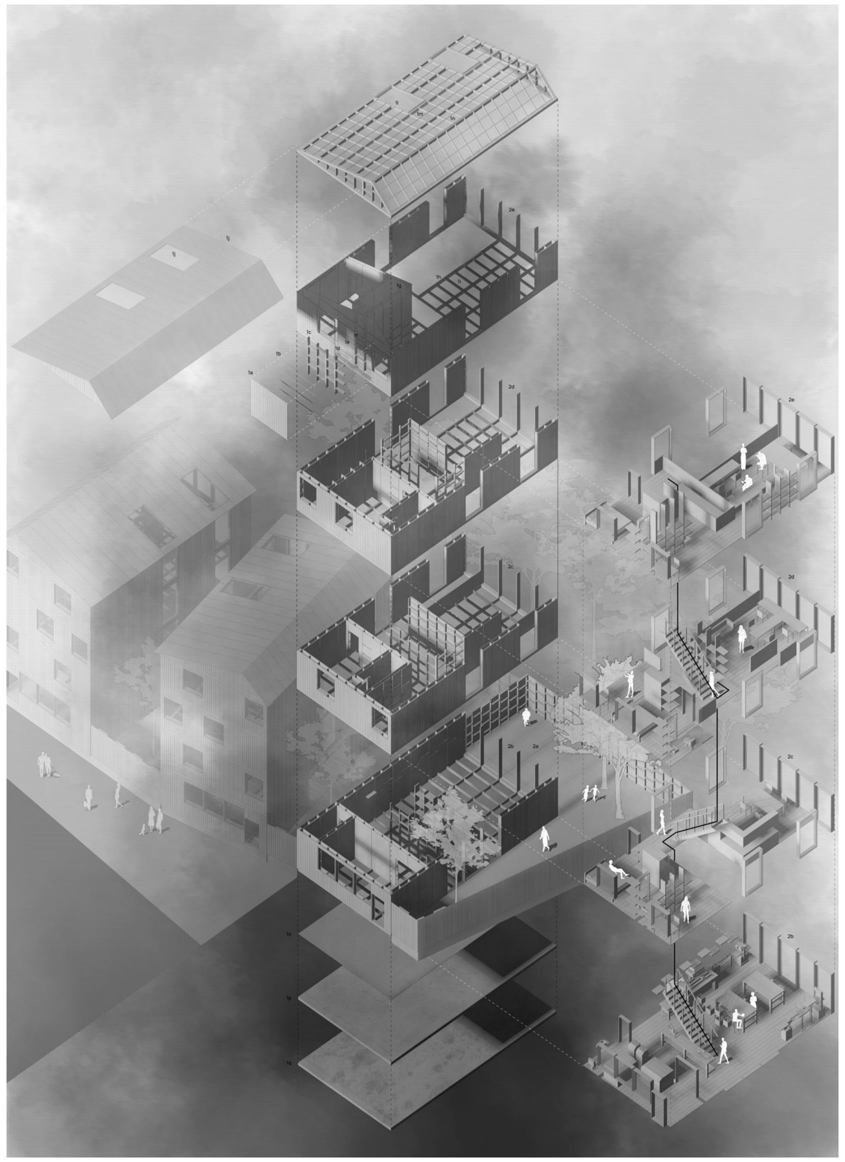


Draft Section

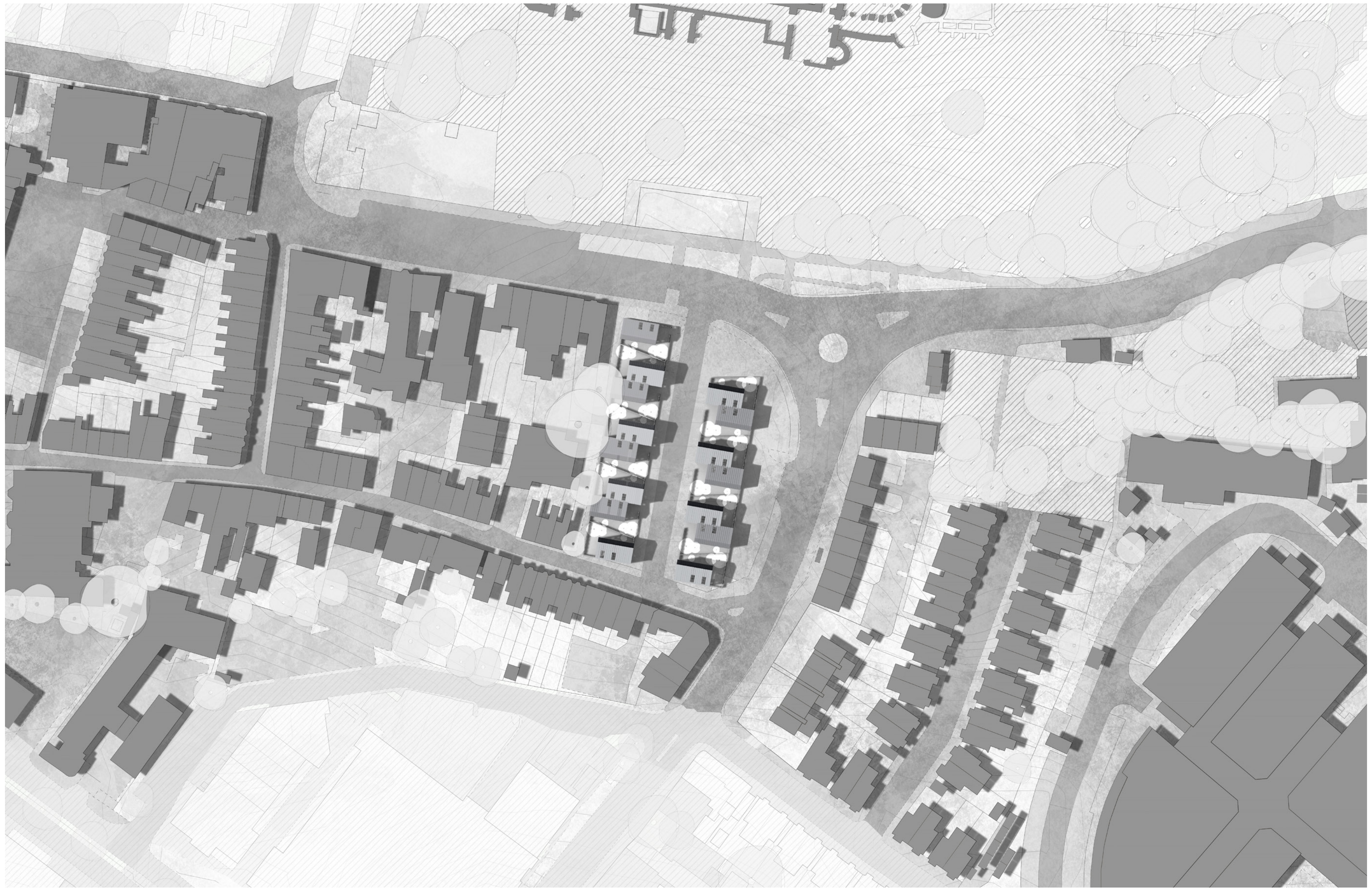
Housing for Product Designer(s)

The project brief was to create a 15-unit live/work housing scheme for a group of four people/family/co-workers with a specific profession that would drive the design of the house.

My project narrative was a group of product designers that moved to this new housing build, where they would work 'remotely' but be in a building that accommodates them with tools and equipment that wouldn't be in a typical house - like workshops and large studio spaces.

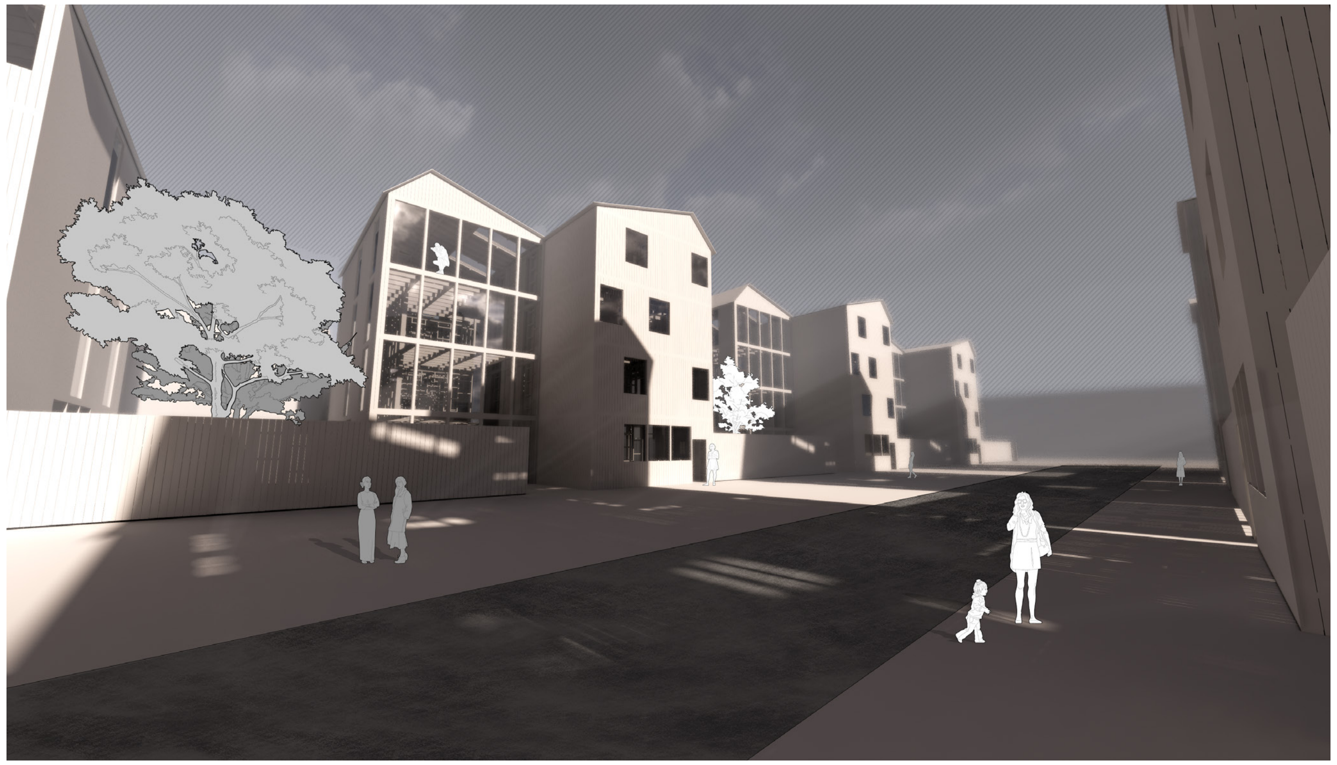


Exploded Axonometric Diagram

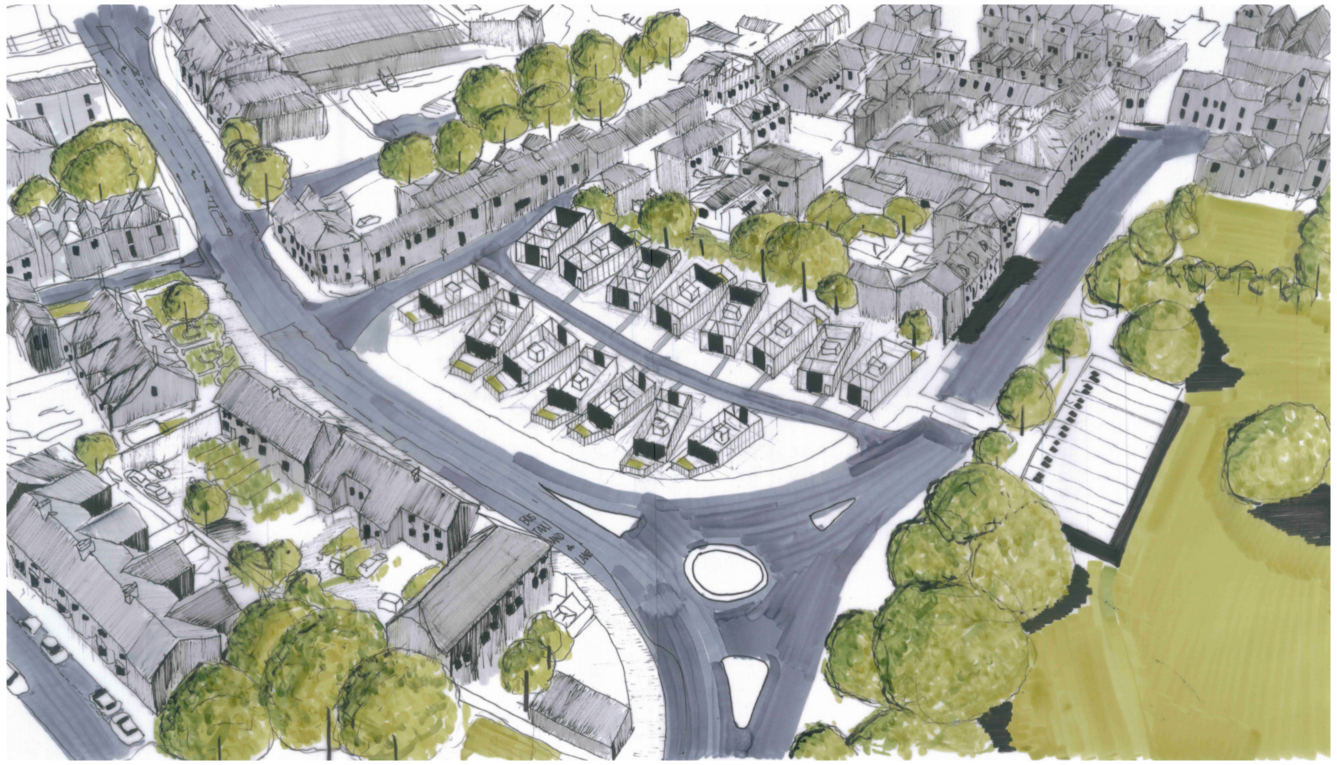


1:500 Masterplan

Selected Works

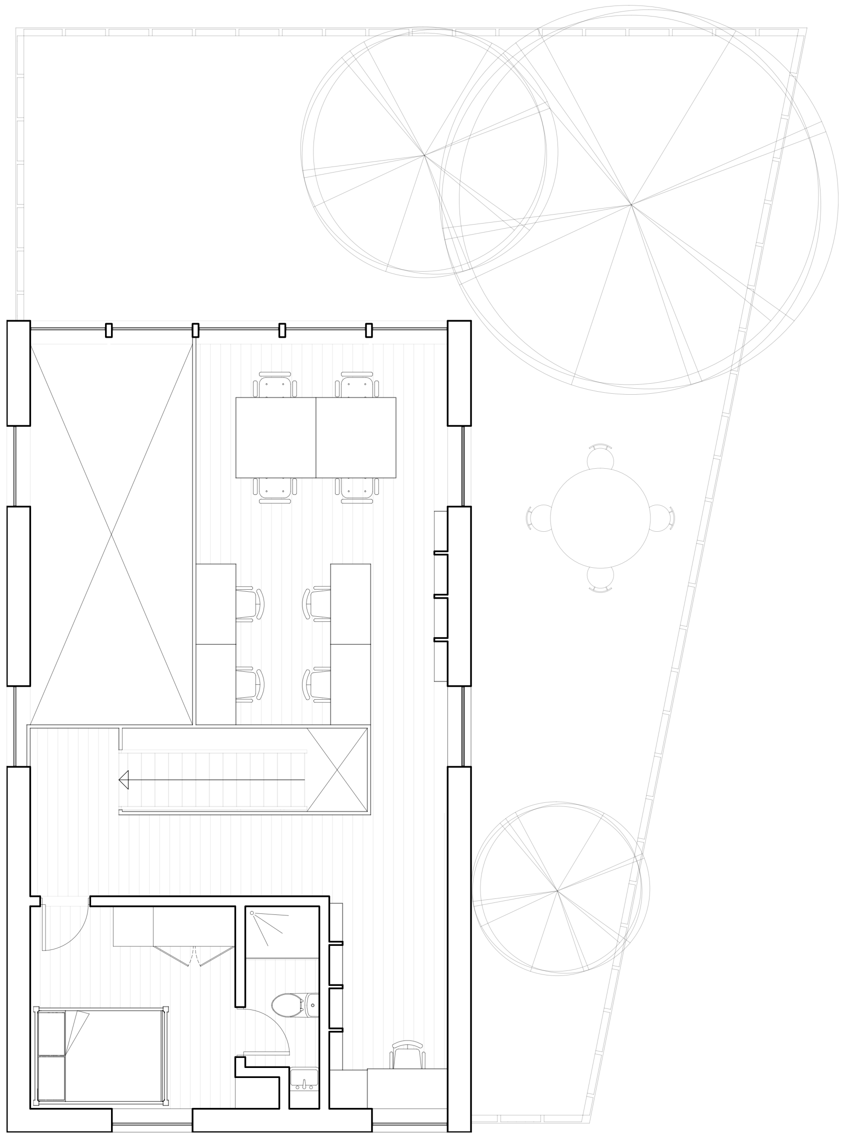


Exterior view

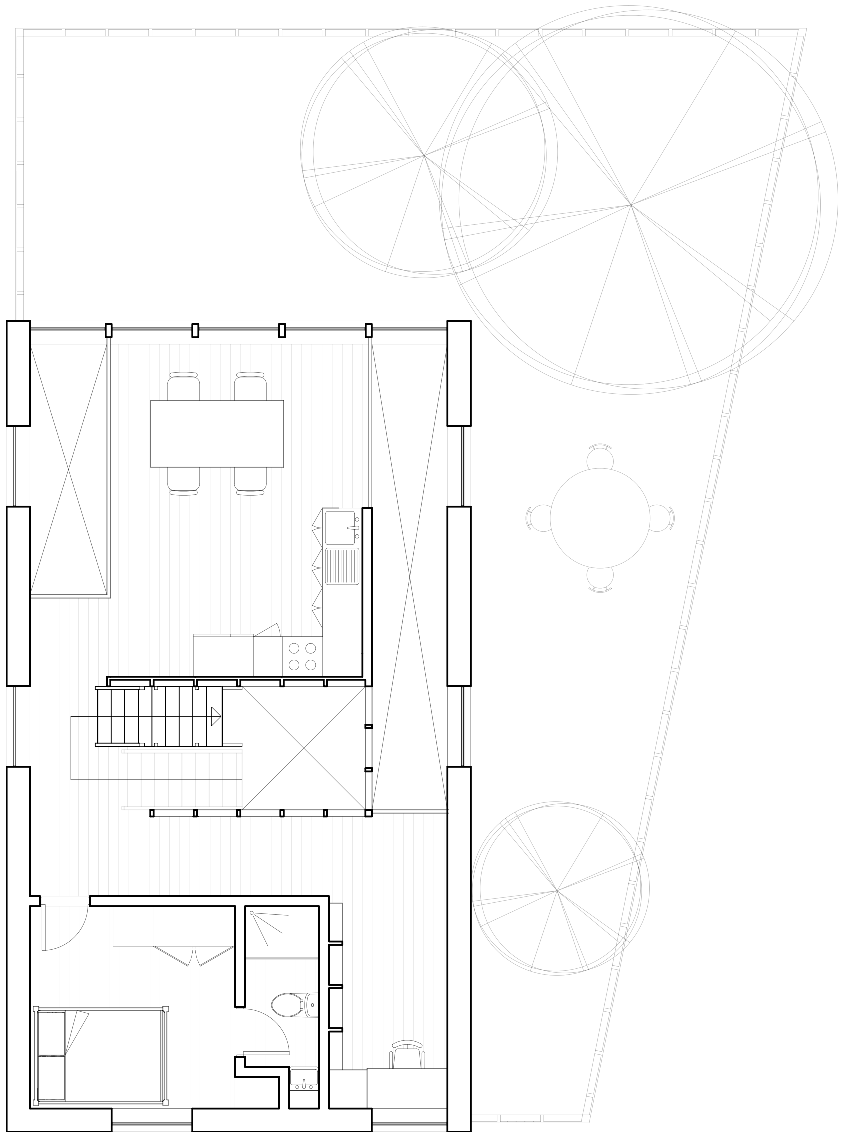


Hand-drawn aerial view

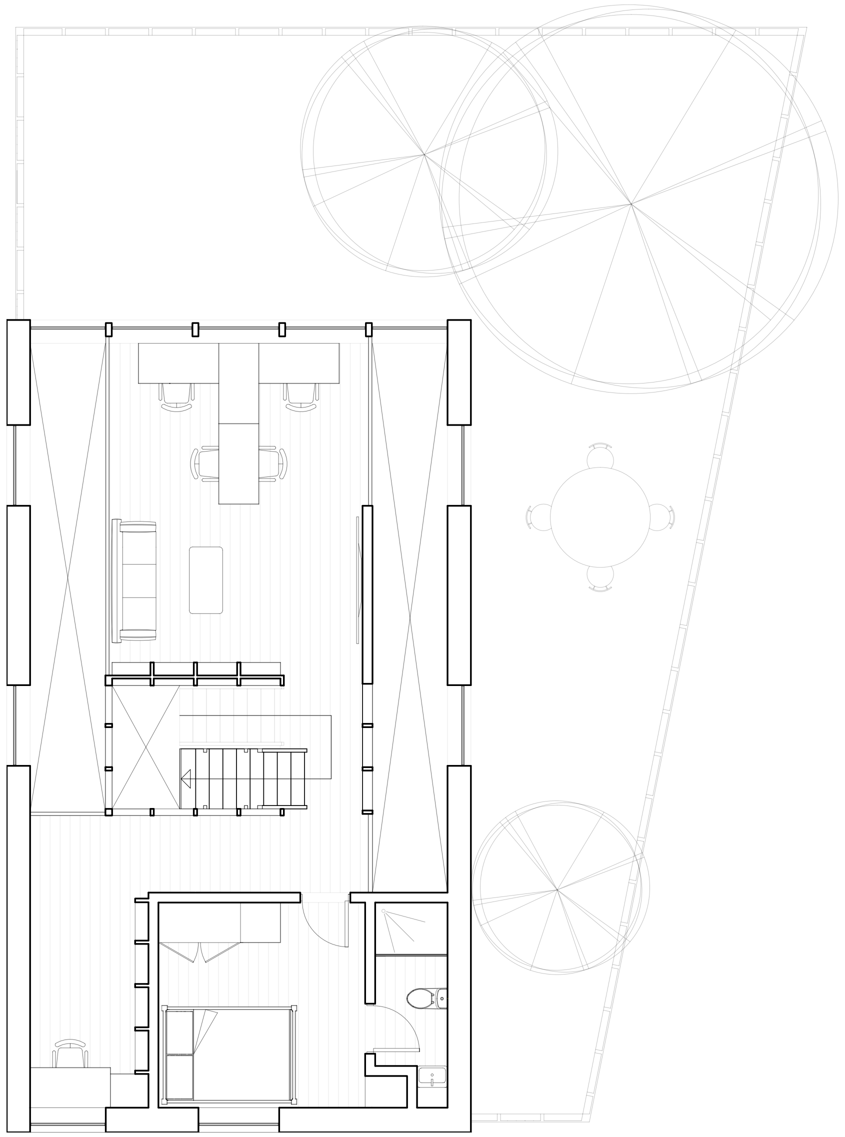
Selected Works



First floor plan

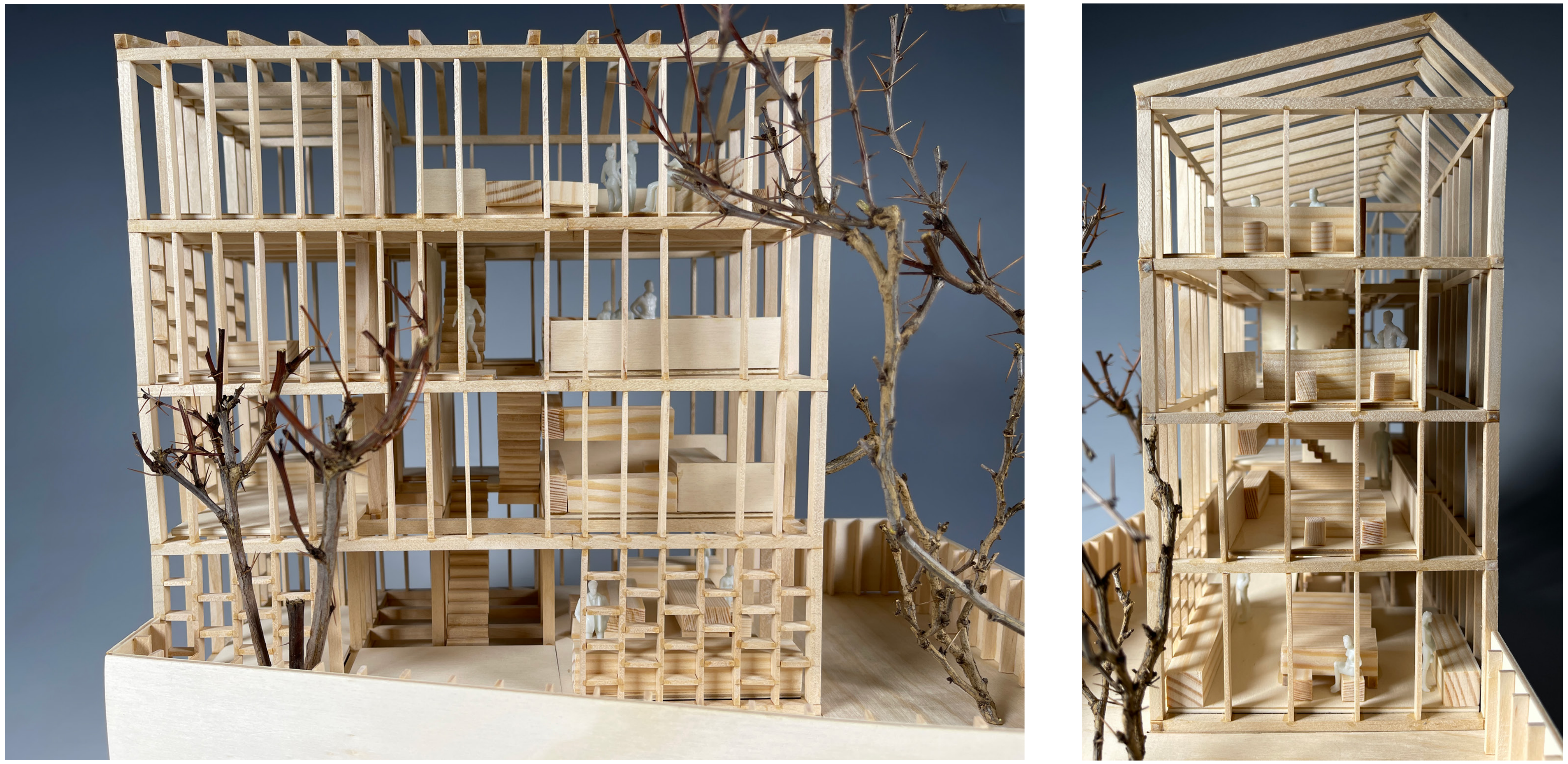


Second floor plan

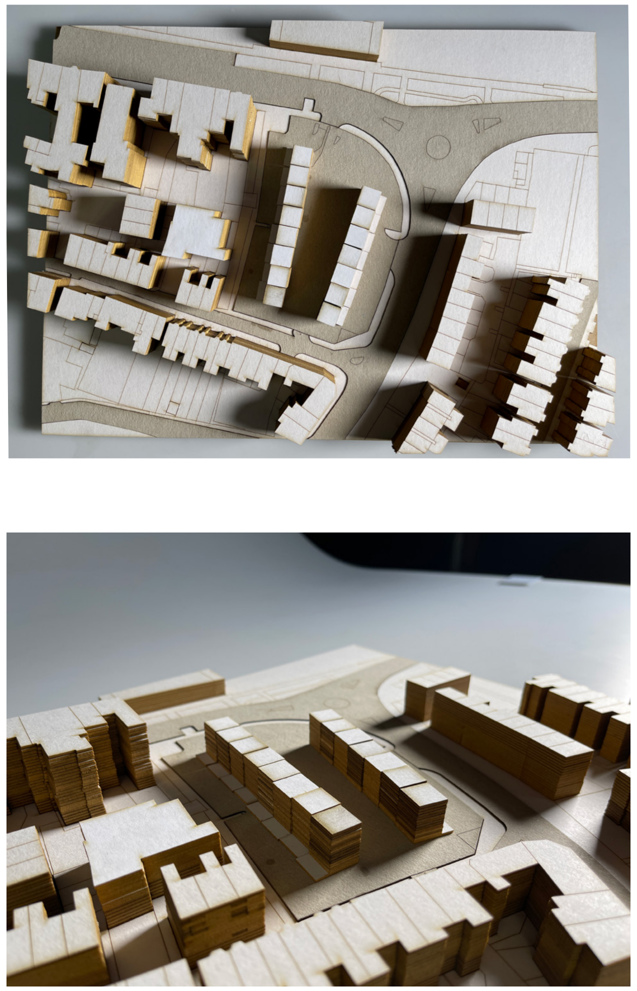


Third floor plan

Selected Works

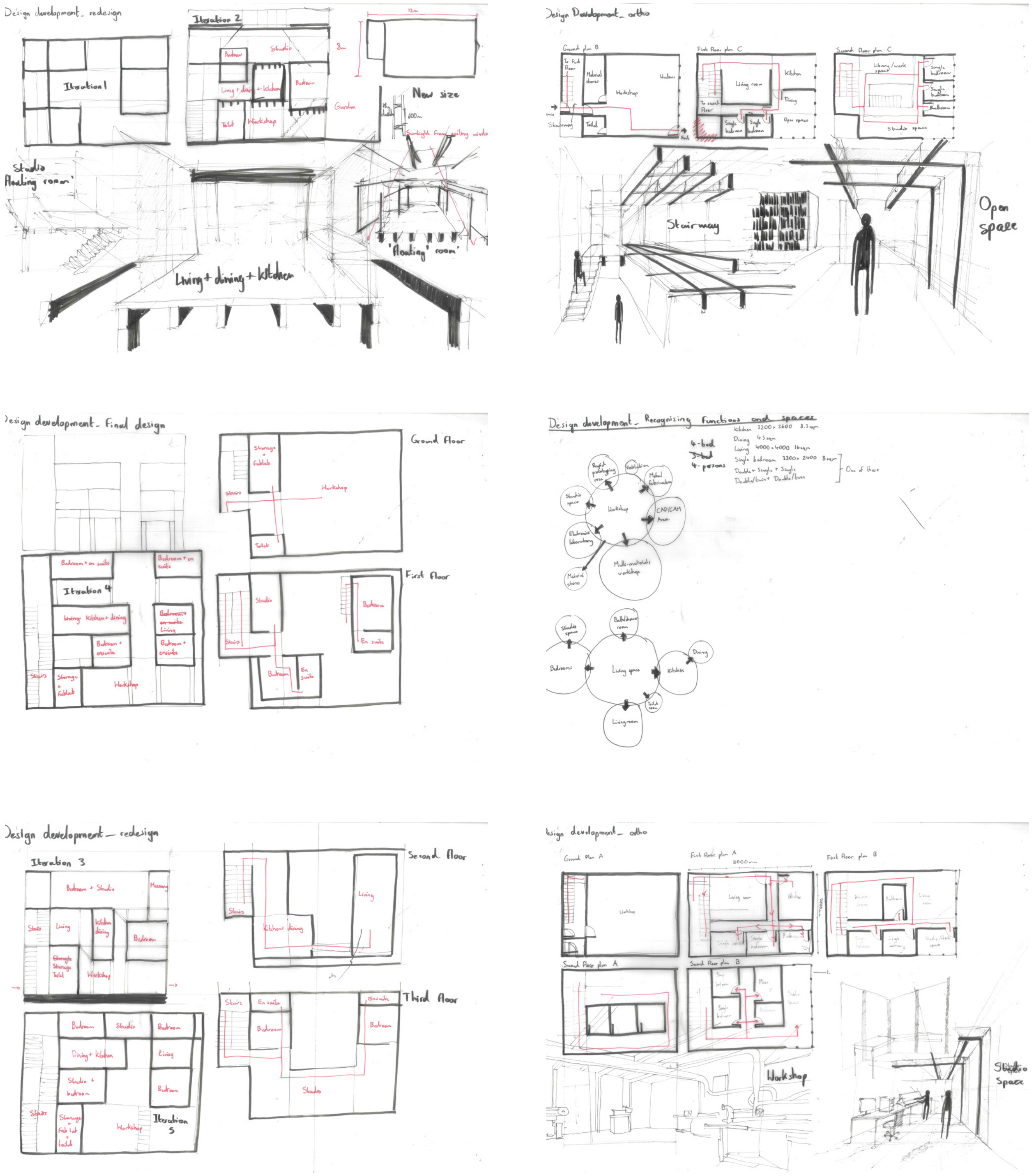


1:50 structural model

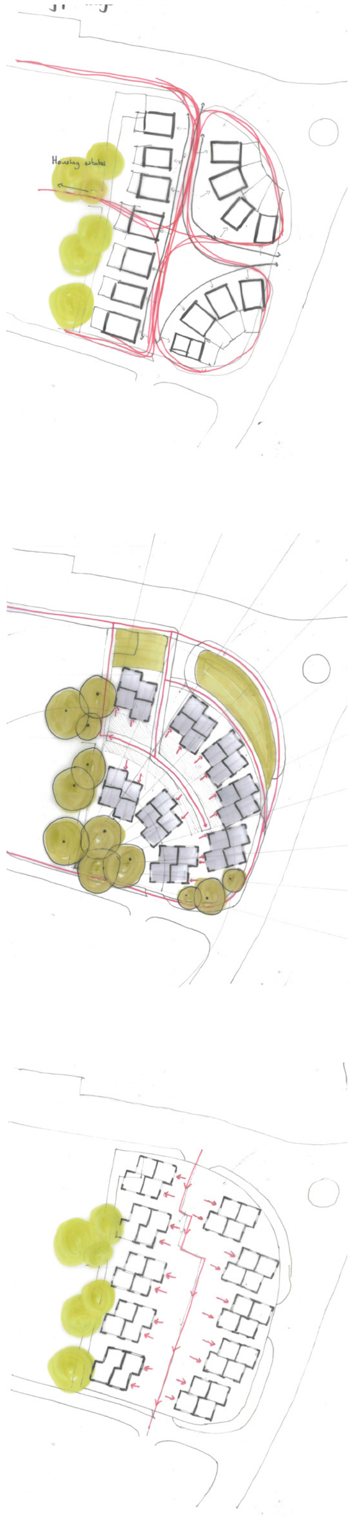


1:500 site madding model with unit arrangement

Work-In-Progress

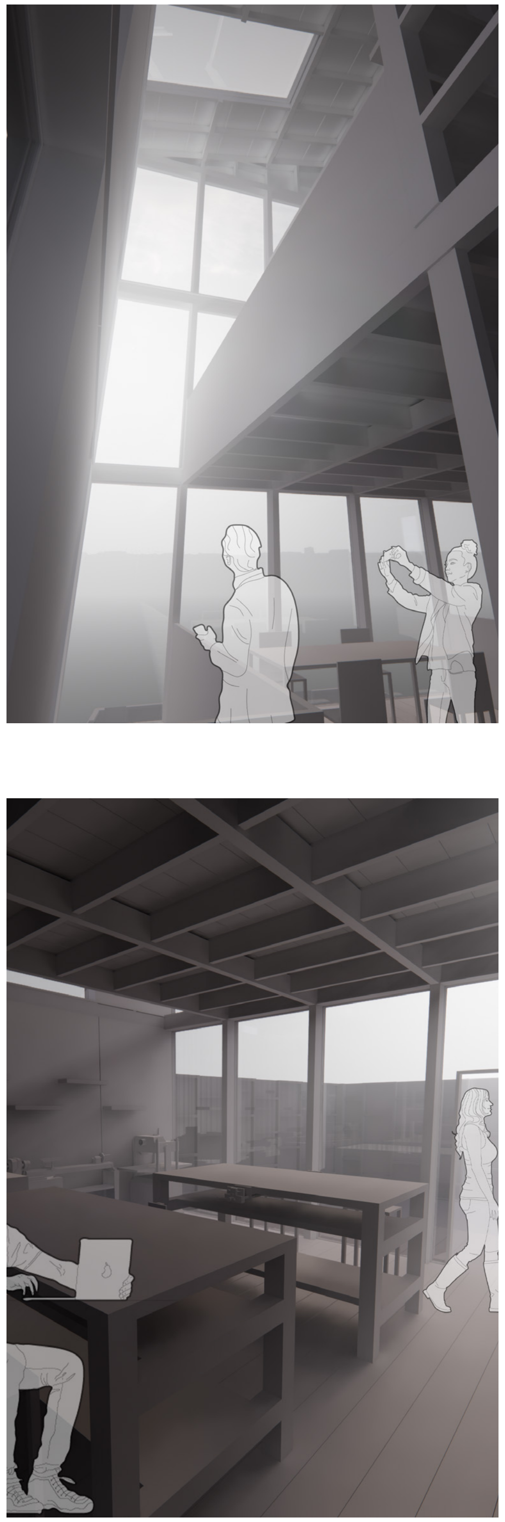

Design development_ redesign
Iteration 1
Iteration 2
New size
Studio
Floating room
'Floating' room
Living + dining + kitchen
Design Development_ ortho
Stairway
Open space
Design development_ Final design
Ground floor
First floor
Iteration 4
Design development_ Recognising functions and spaces
Design development_ redesign
Iteration 3
Second floor
Third floor
Iteration 5
Design development_ ortho
Workshop
Studio Space

Concept sketches



Site unit arrangement

House massing models



Interior views

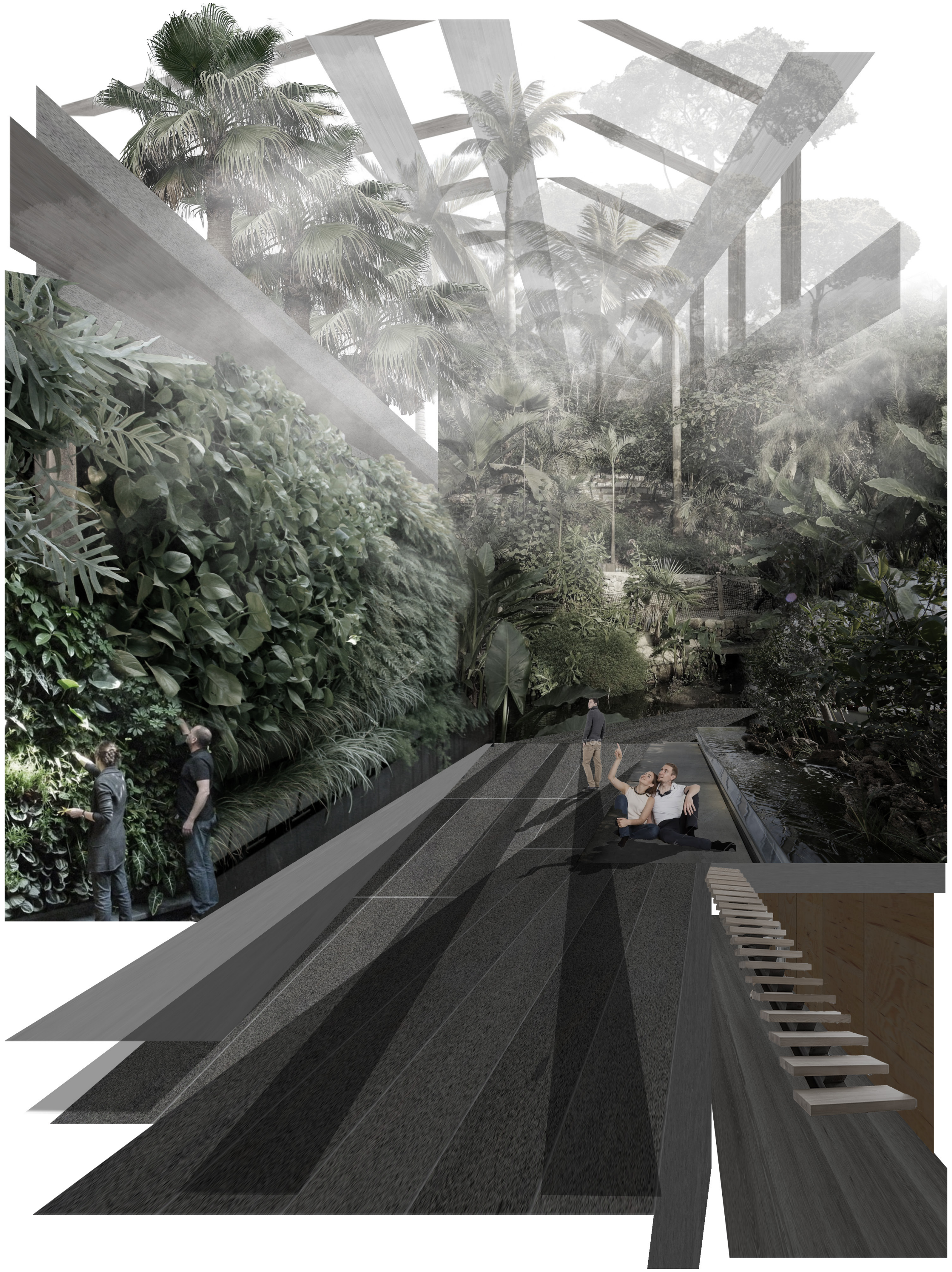
The Urban Cultivation Canteen

https://www.presidentsmedals.com/Entry-60381

The Urban Cultivation Canteen is a hub for the production of cultured meat and hydroponic fruit and vegetables. The building is a research and education centre, promoting the ecological, social, and economic benefits of new methods of cultivation in an urban environment. It houses a culinary school, cafes, a canteen, and a food bank. The building is laid out around a regular glulam grid, inhabited with planting, and focused around a grand central atrium.

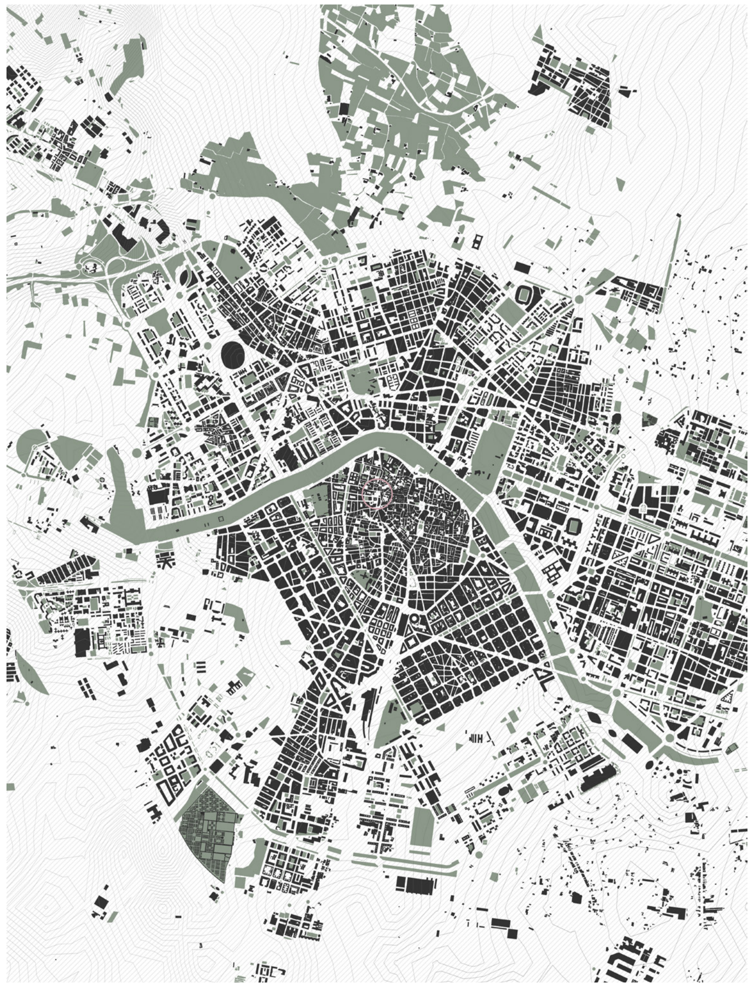
Culinary students and apprentices can receive supplementary education with a primary focus on sustainable food practices through cultured meat and hydroponic cultivation. This is to raise awareness and tackle the growing climate crisis, where the agriculture industry is one of the main contributors to global greenhouse gas emissions.

The scheme is funded by the Valencia Municipal Food Council, their mission is to establish a fairer and more sustainable food system in Valencia. Affordable food, served in the canteen and elsewhere in the building ensures that it is accessible to the people of Valencia due to the rise in the cost of living, and thanks to the vertically integrated structure of the scheme where it does not rely on third-party suppliers and bodies.



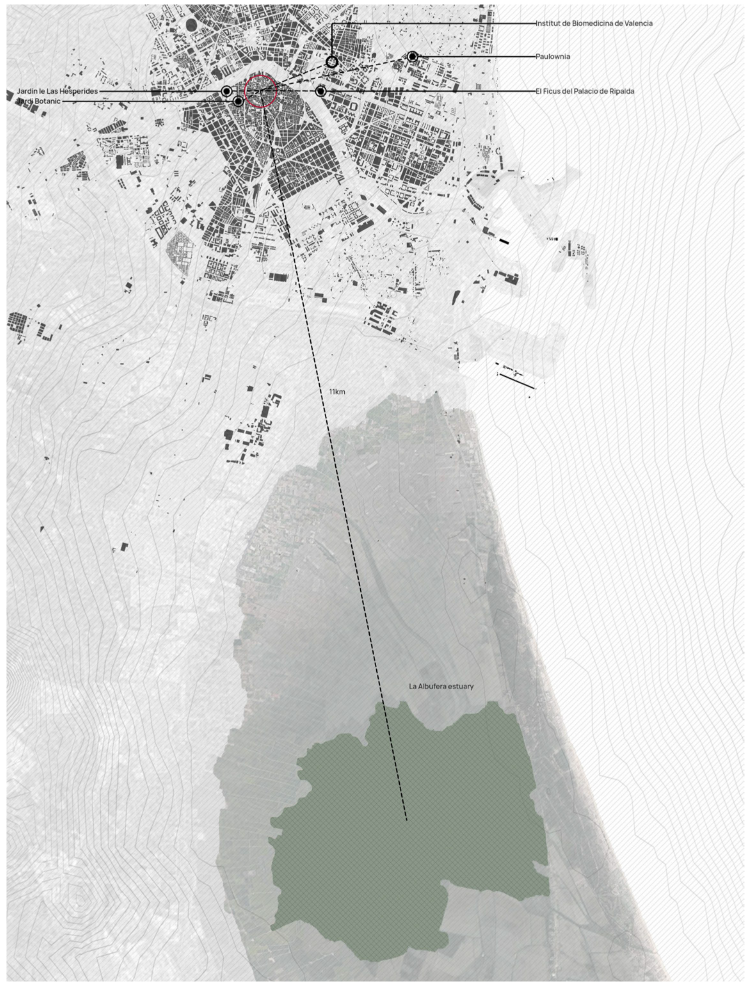
Conceptual interior collage

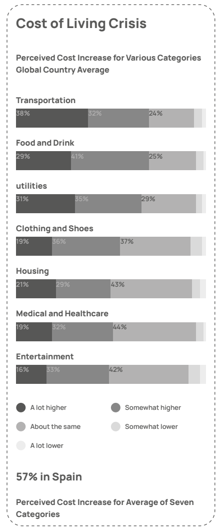
Selected Works

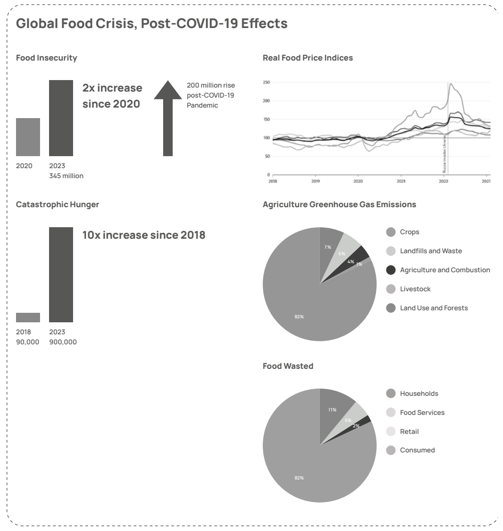


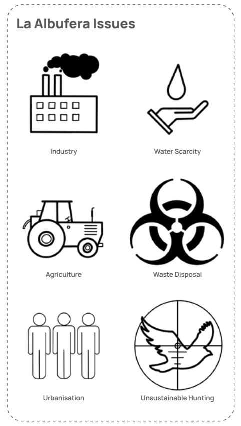
Existing site building

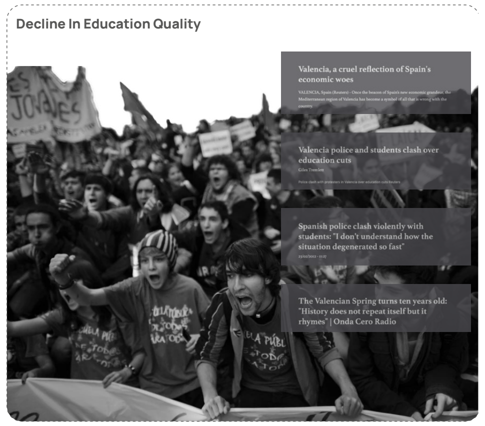
Site context











Valencia, a cruel reflection of Spain's economic woes

VALENCIA, Spain (Reuters) - Once the beacon of Spain's new economic grandeur, the Mediterranean region of Valencia has become a symbol of all that is wrong with the country.

Valencia police and students clash over education cuts

Giles Tremlett

Police clash with protesters in Valencia over education cuts Reuters

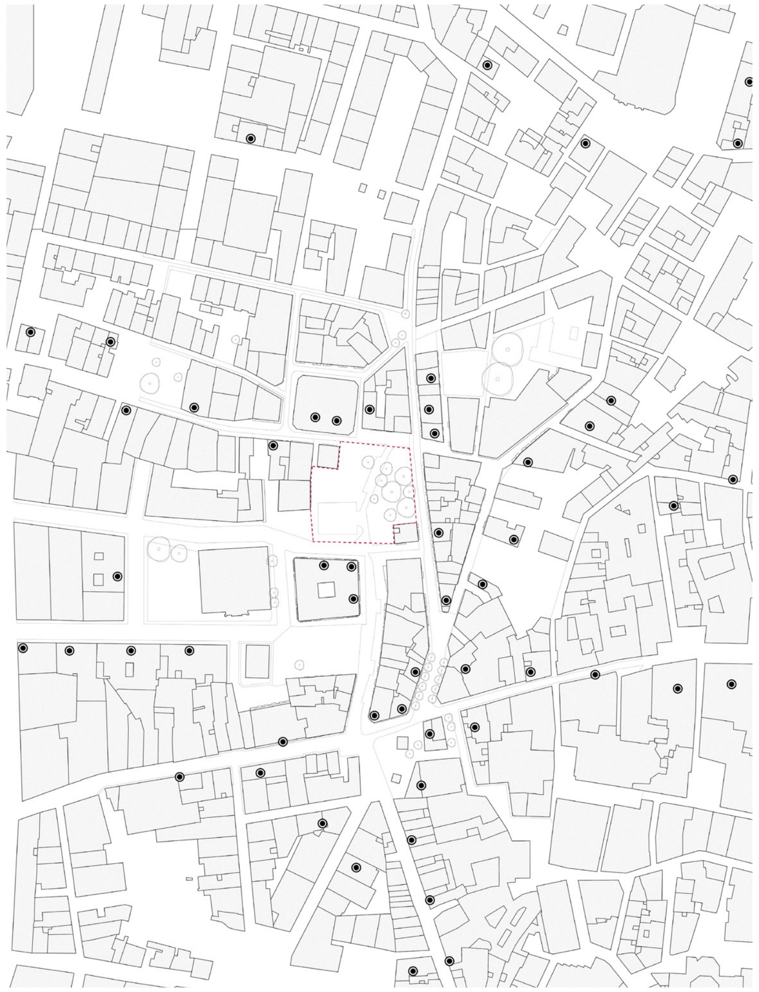
Spanish police clash violently with students: "I don't understand how the situation degenerated so fast"

23/02/2012 - 11:27

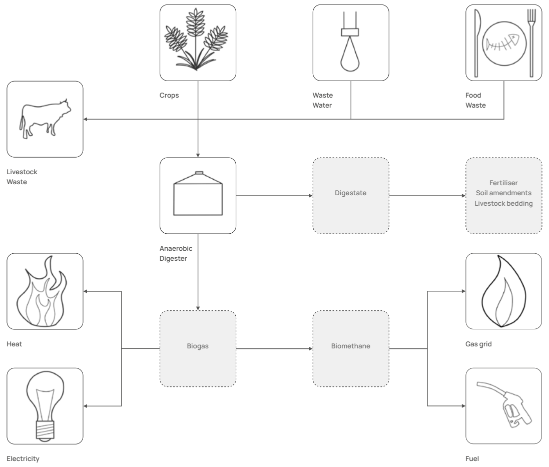
The Valencian Spring turns ten years old: "History does not repeat itself but it rhymes" | Onda Cero Radio

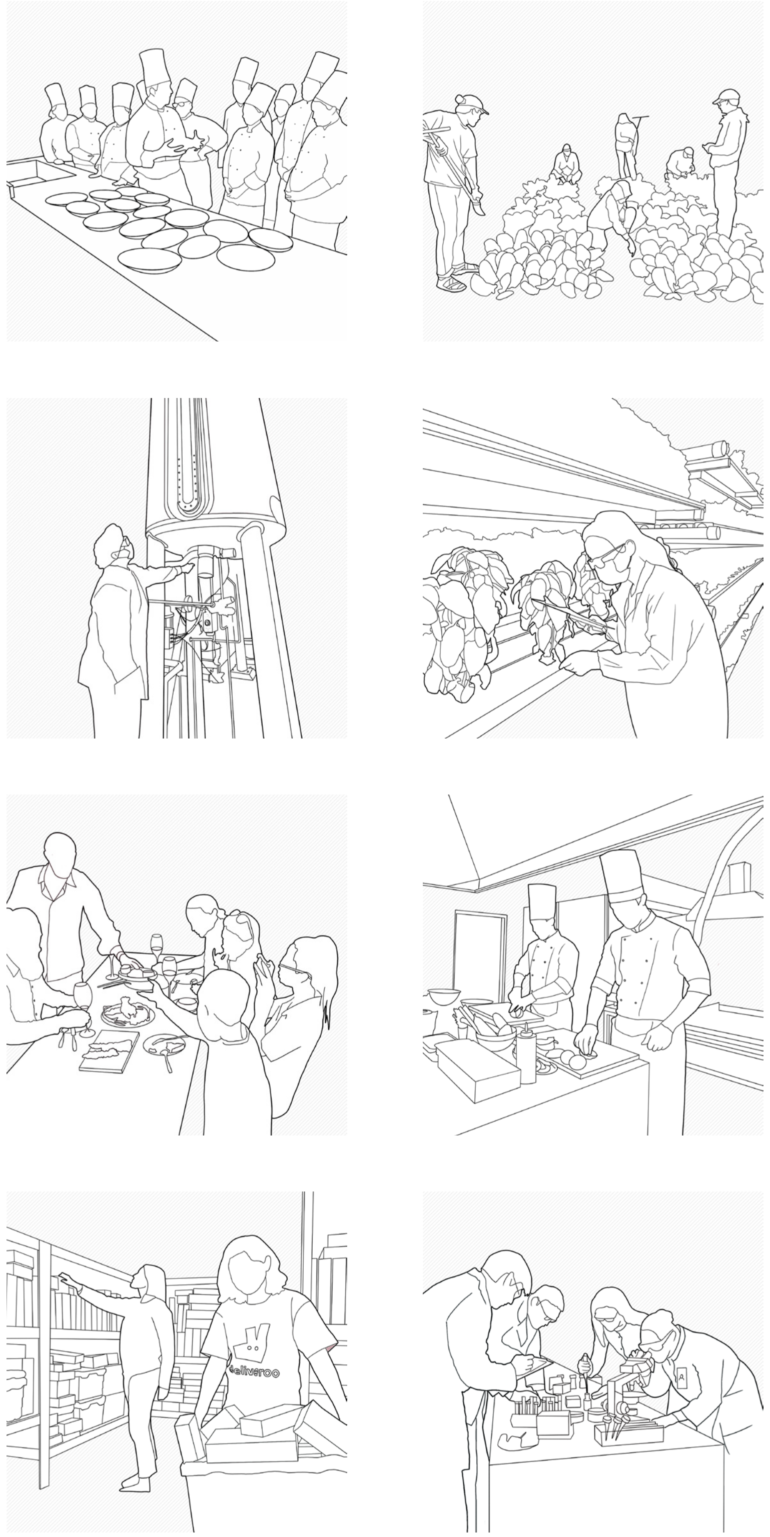
Site issues

Selected Works

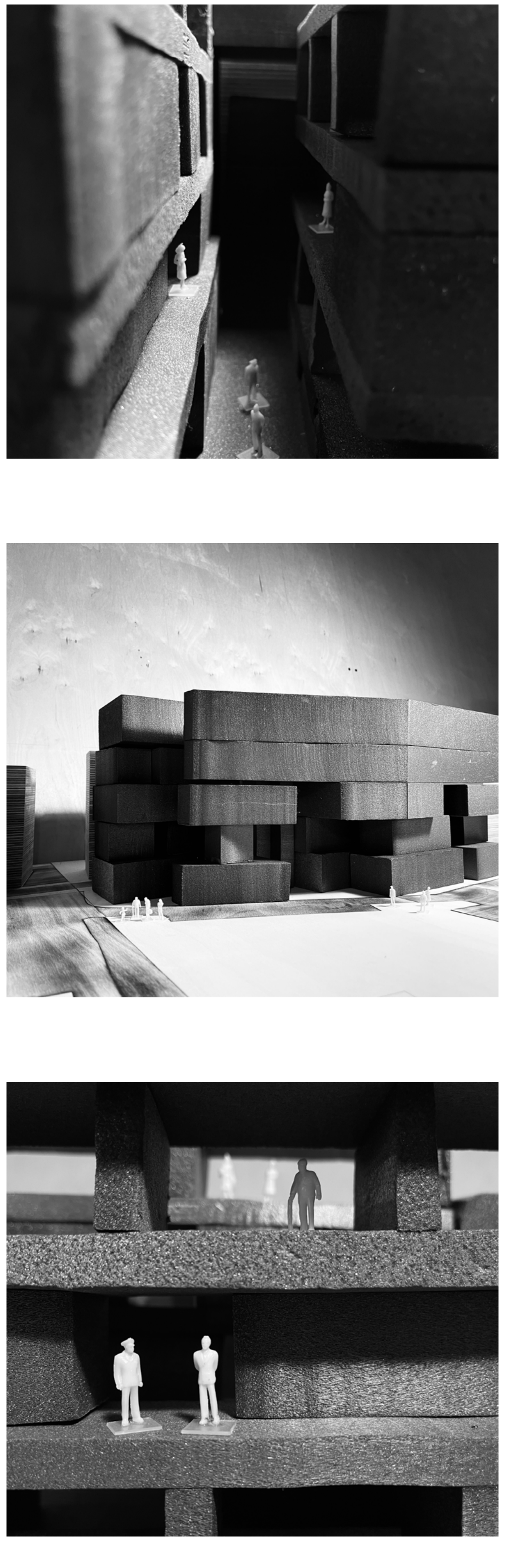


Site opportunities



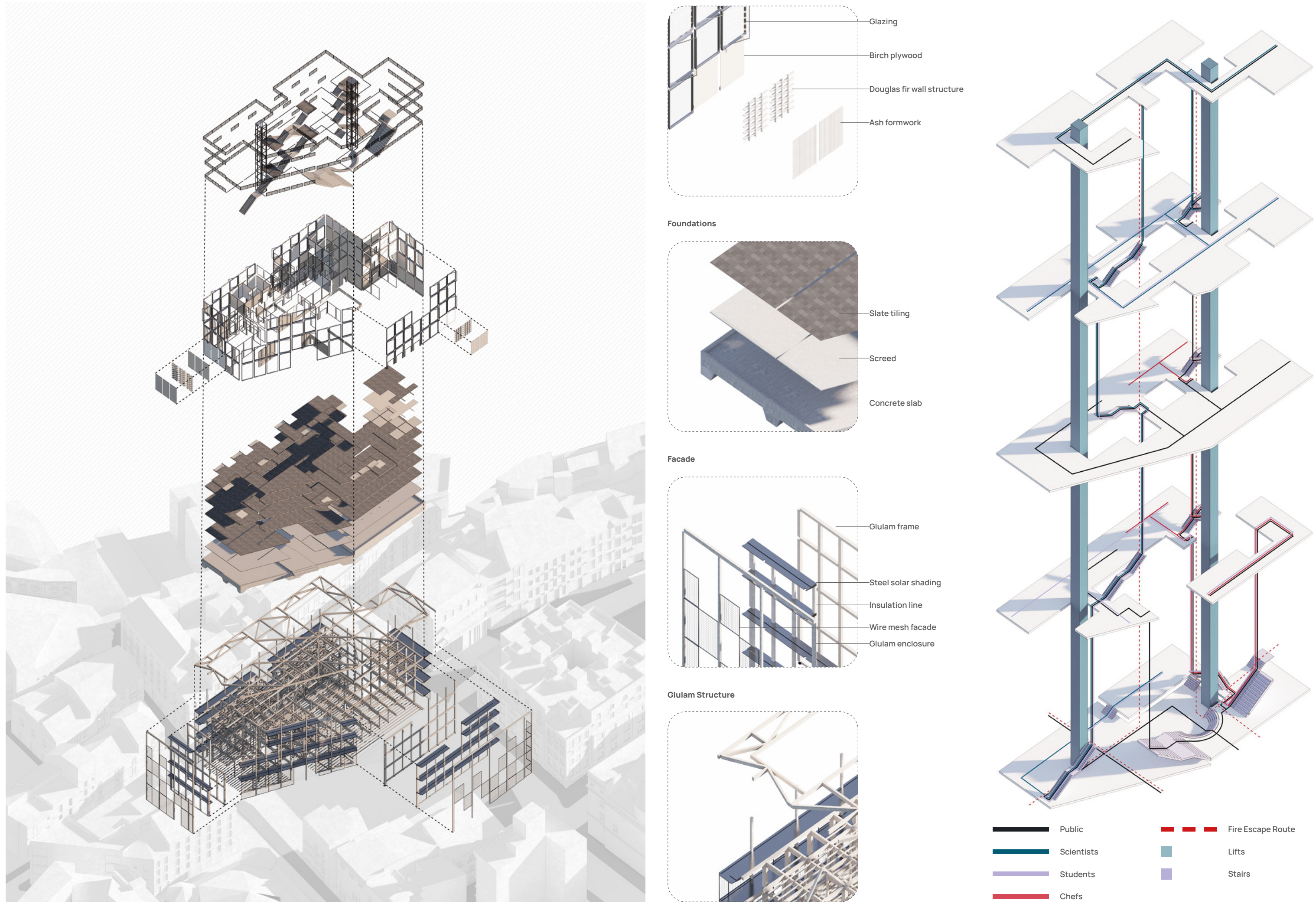


Programmatic activity illustrations

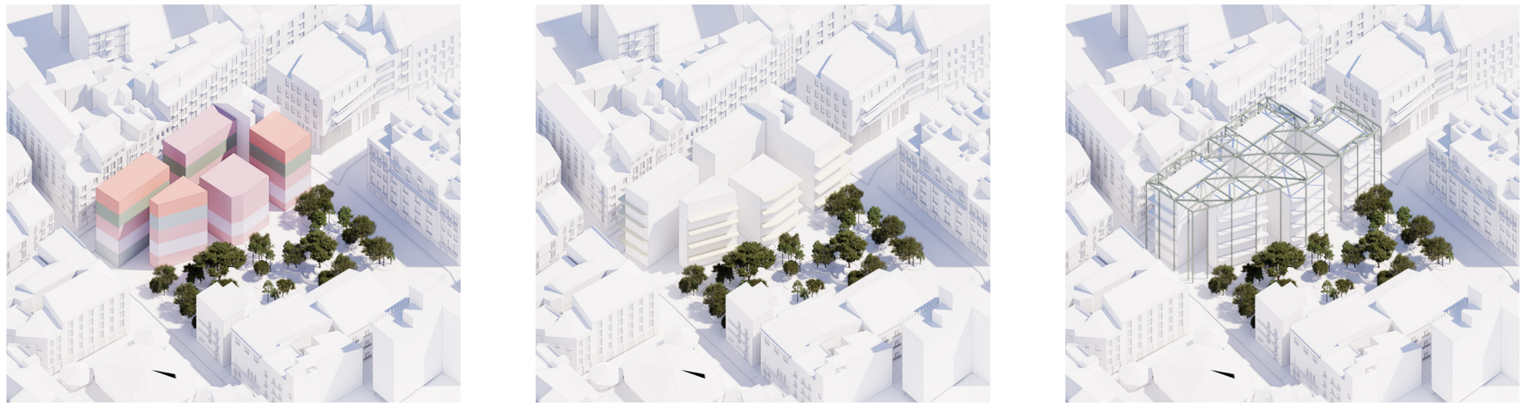


Massing

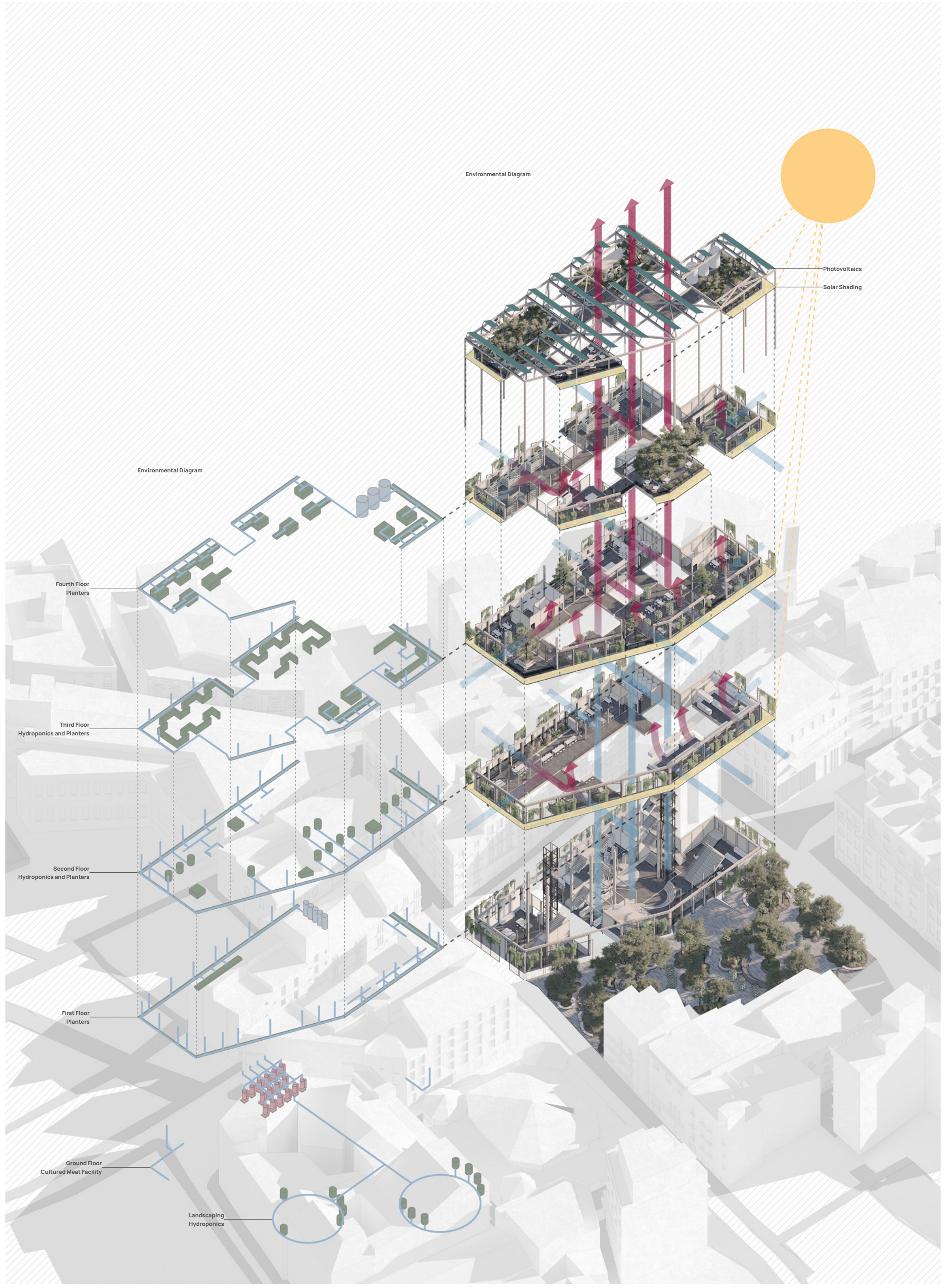
Selected Works



Exploded axonometric diagrams

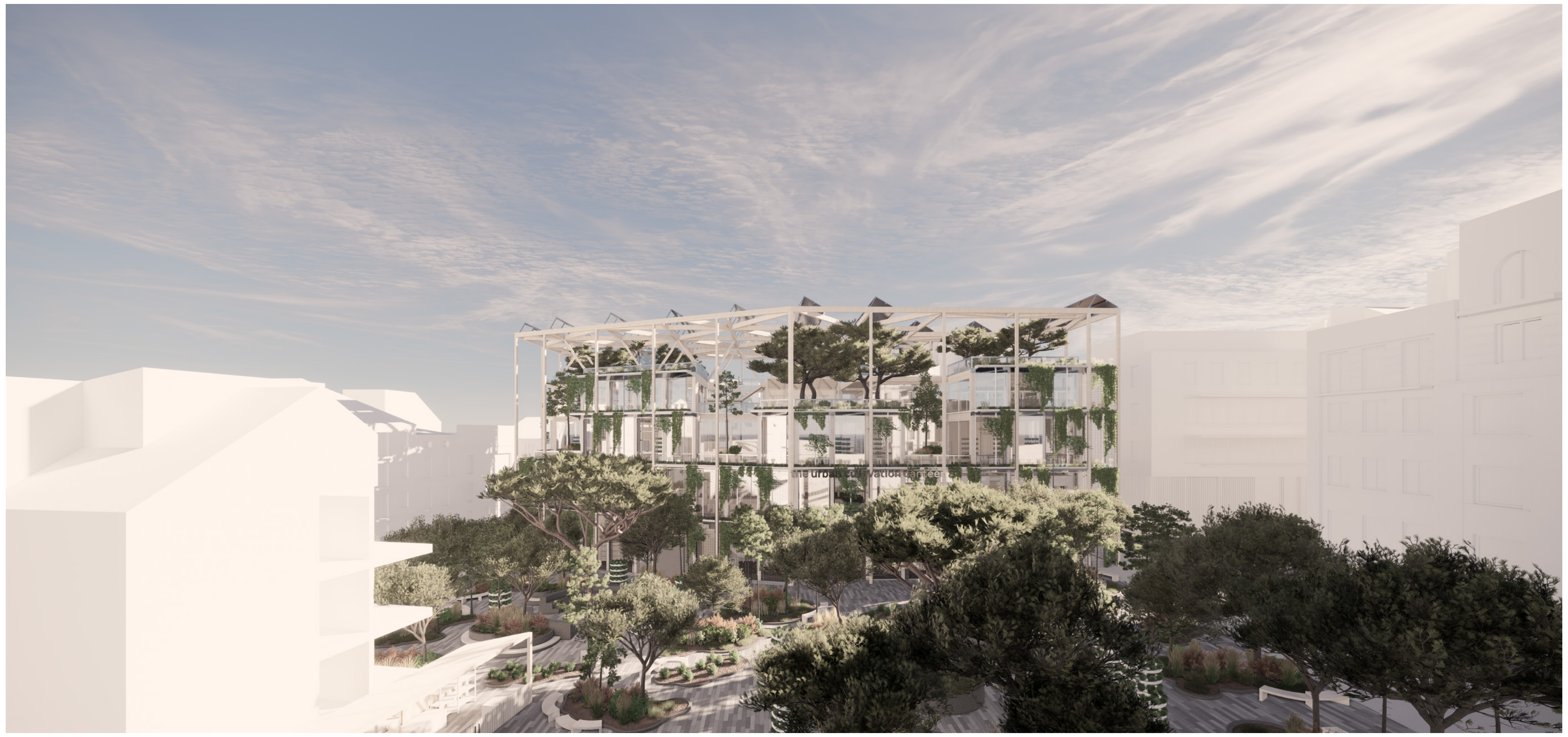


Massing-derived design

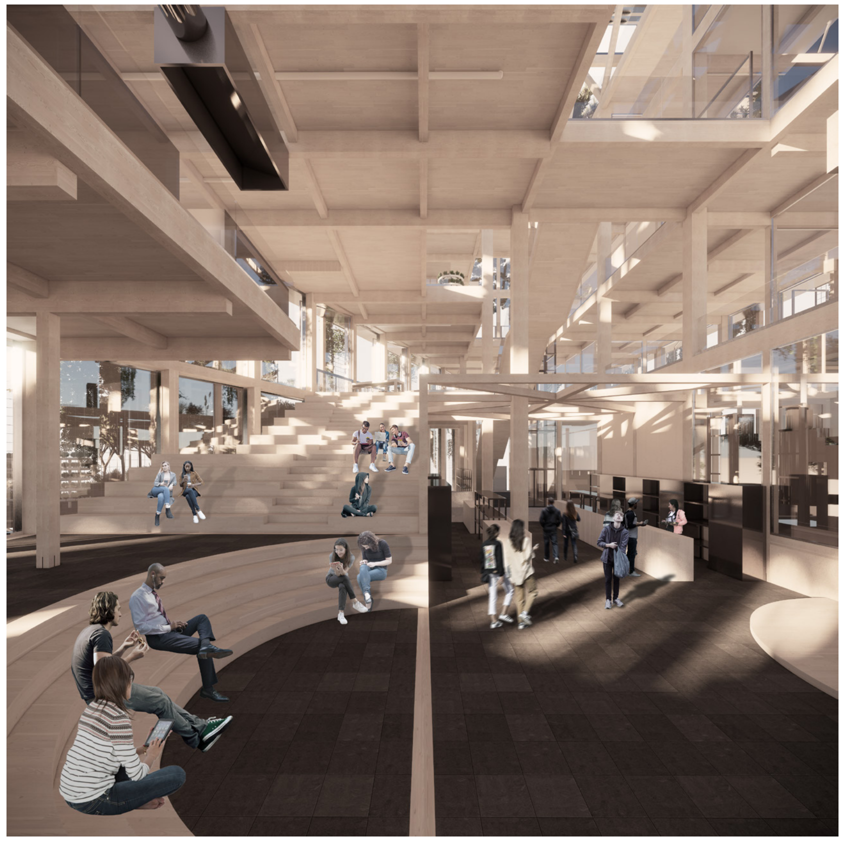


Exploded environmental axonometric diagram

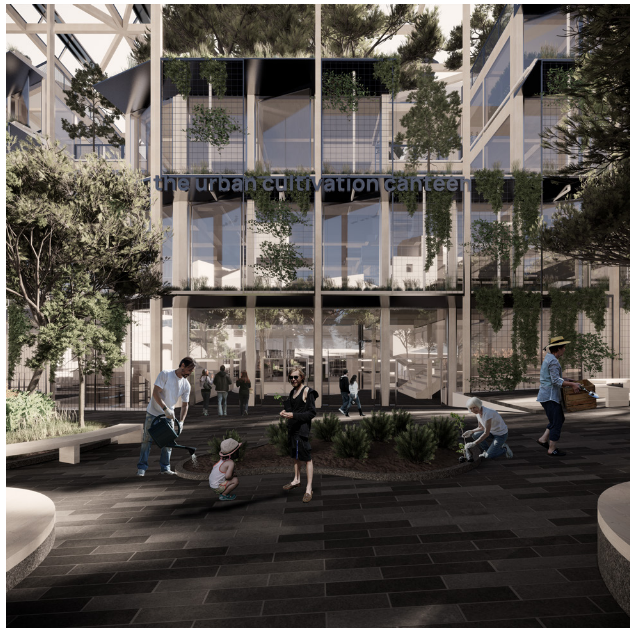
Selected Works



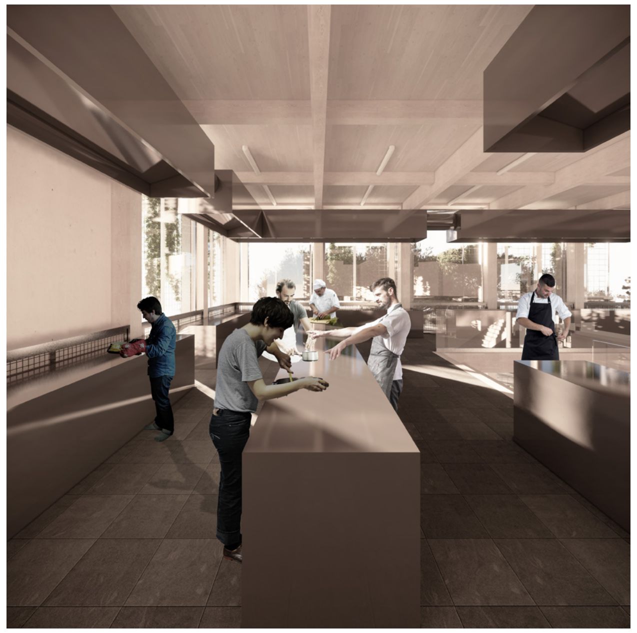
Front



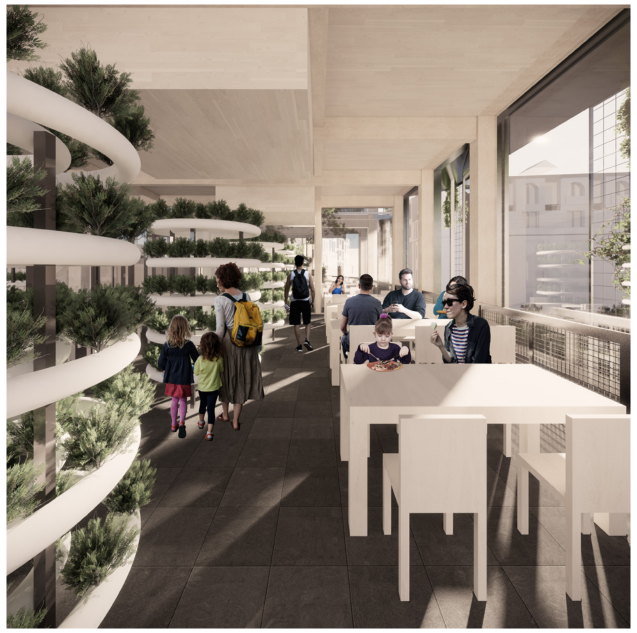
Atrium



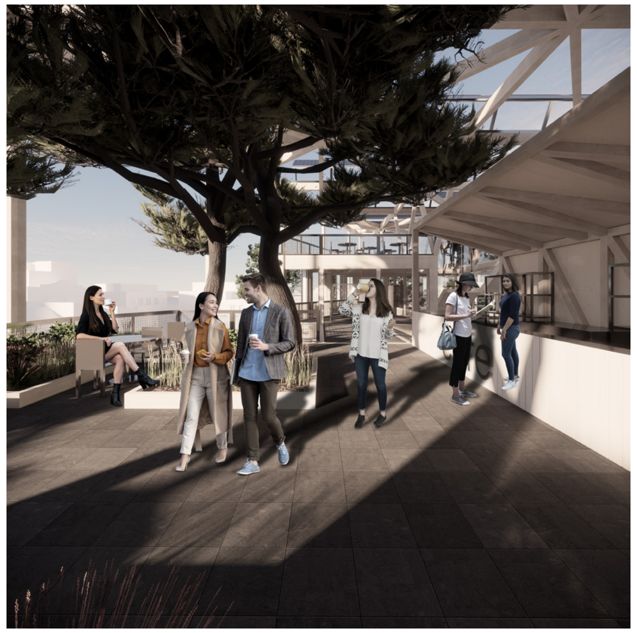
Main entrance



Experimentation kitchen

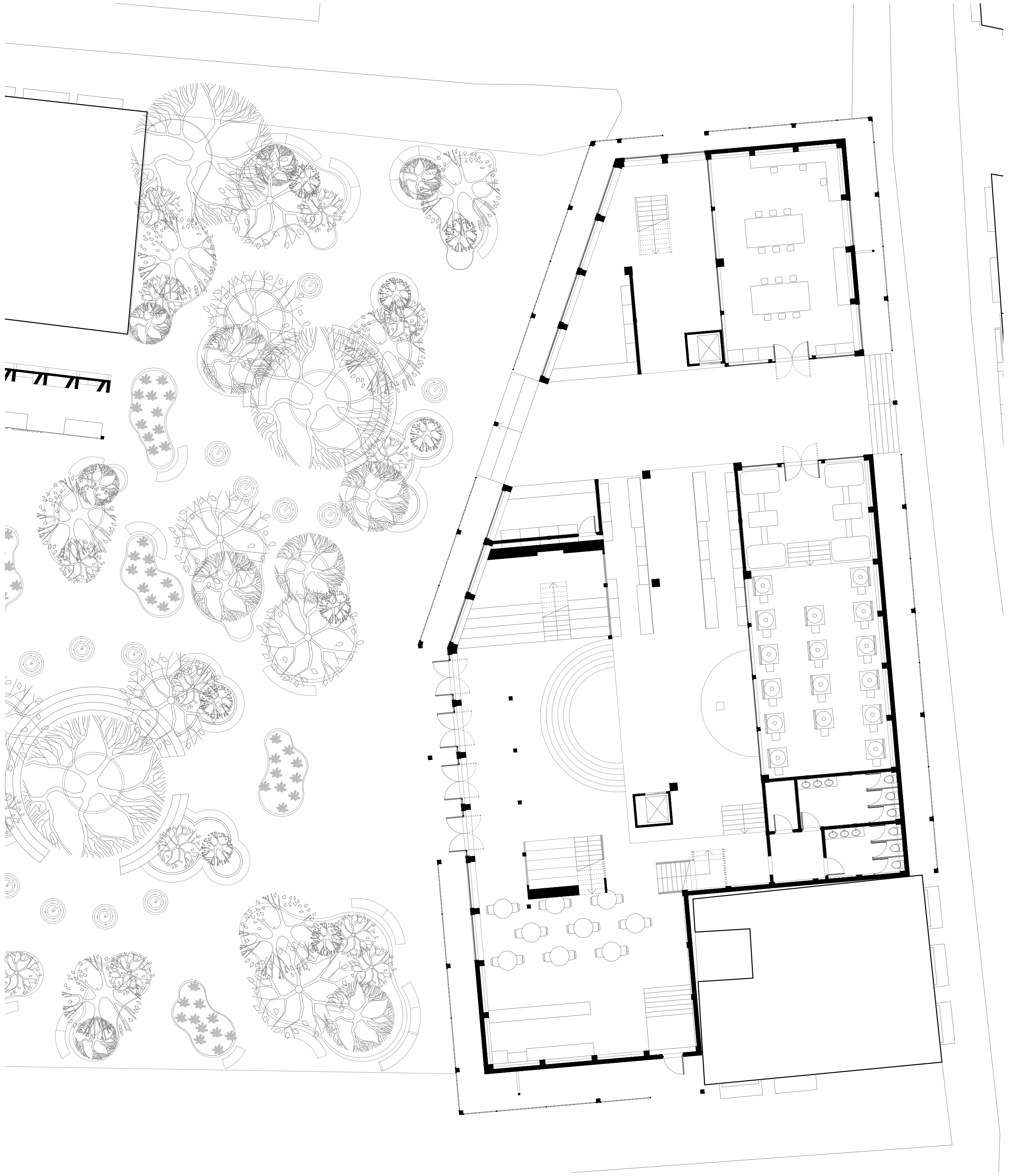


Canteen

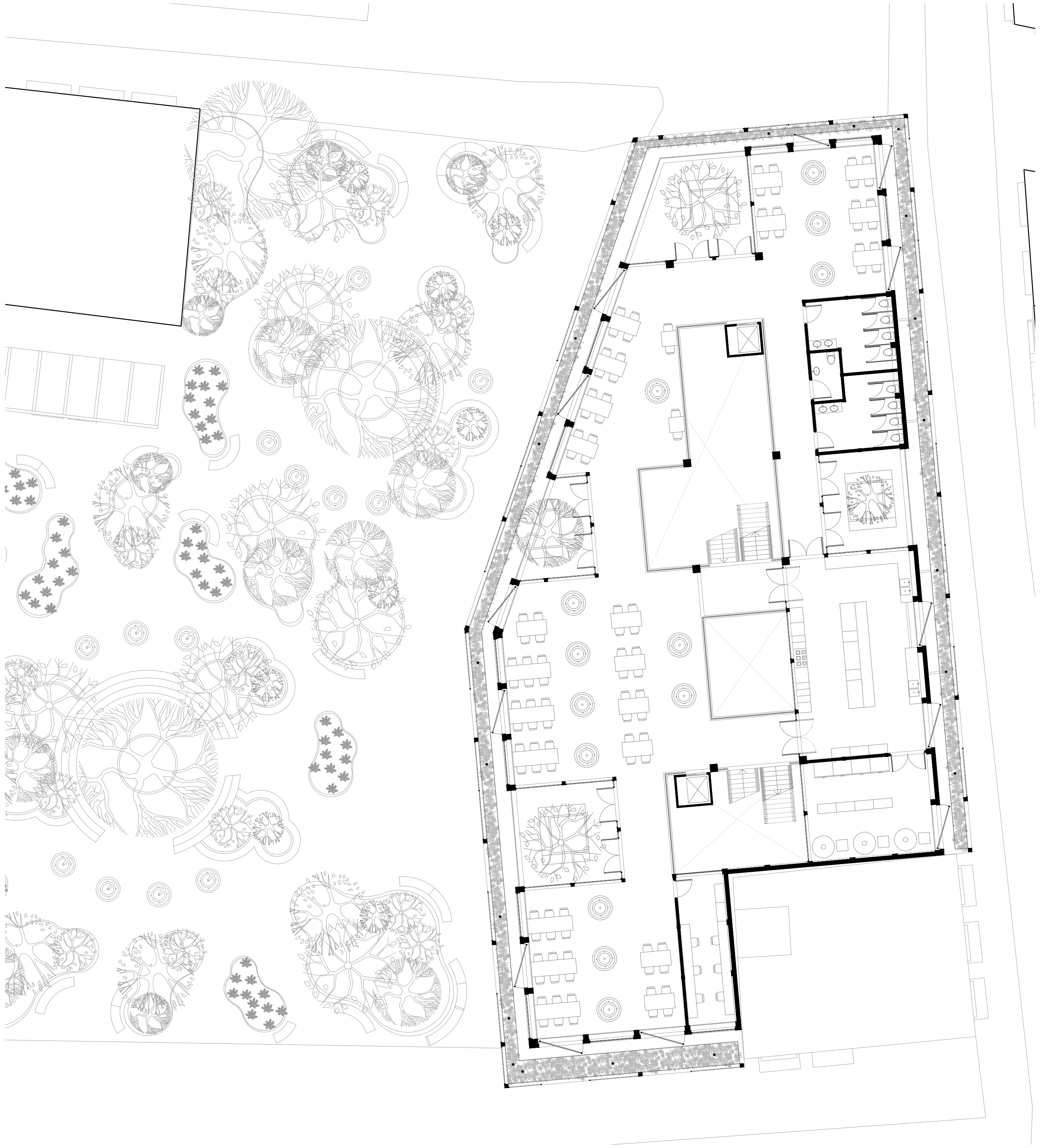


Terrace

Selected Works

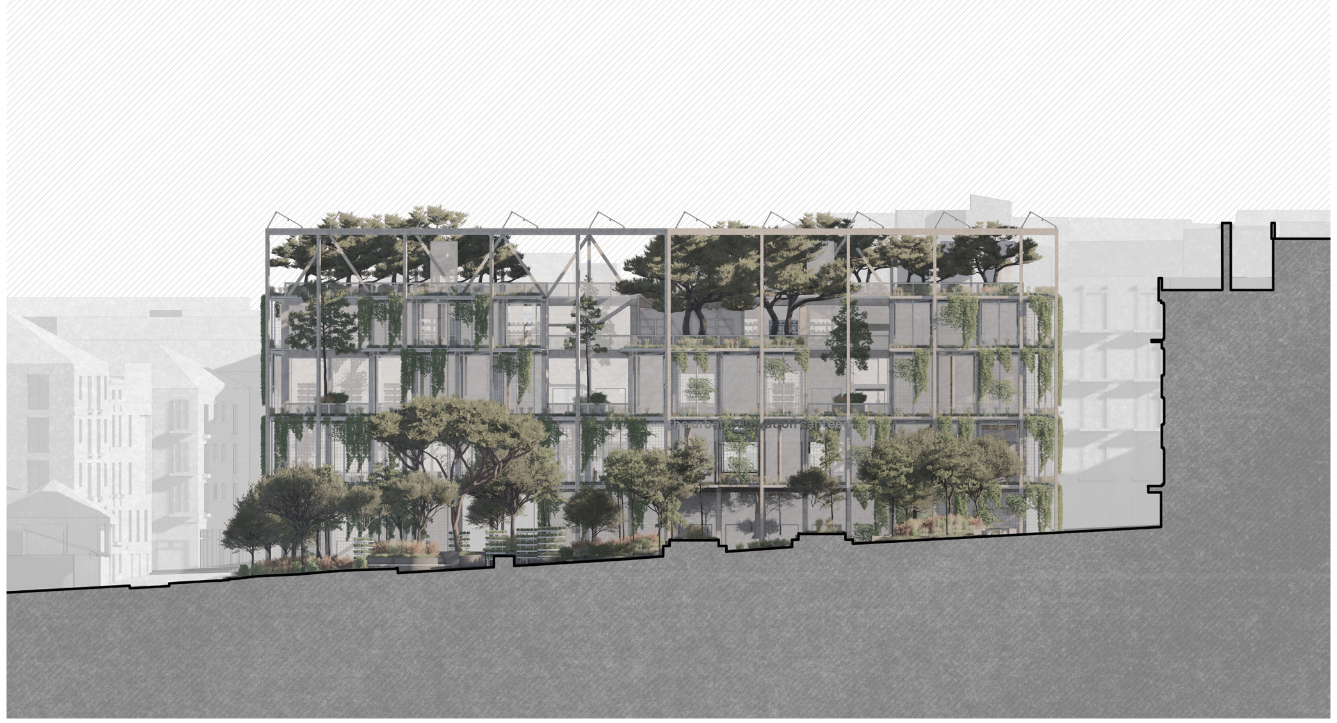


Ground Floor Plan

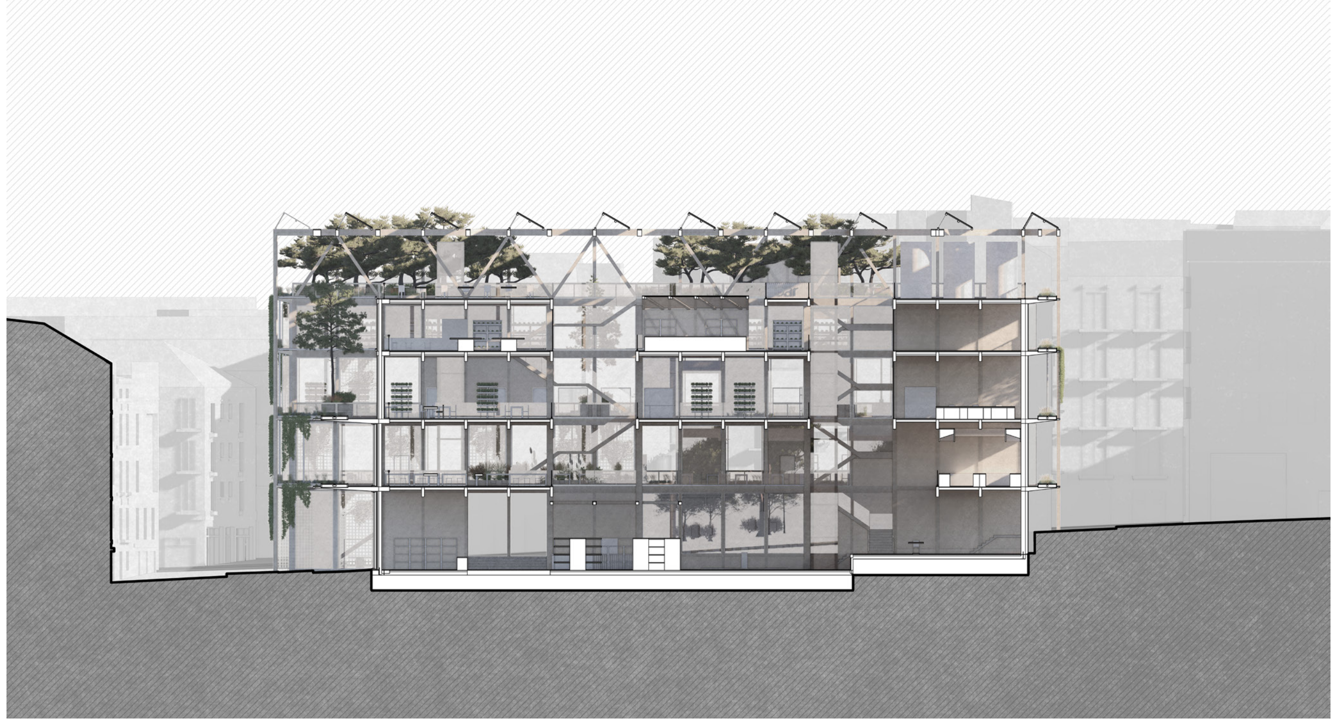


Second Floor Plan

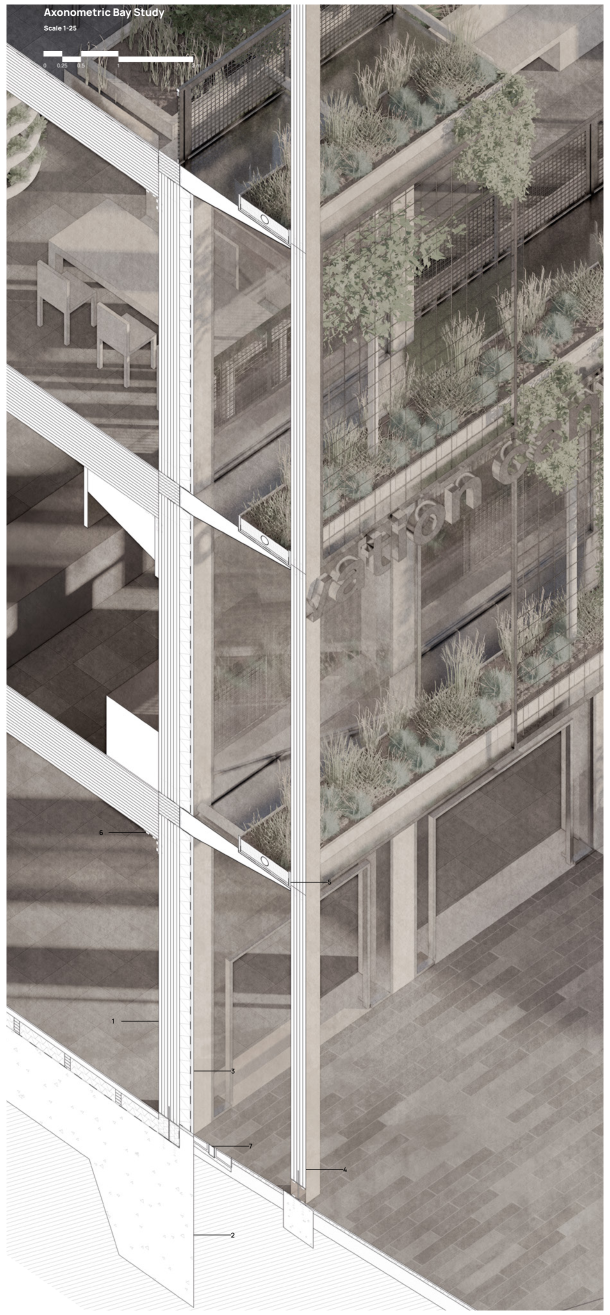
Selected Works

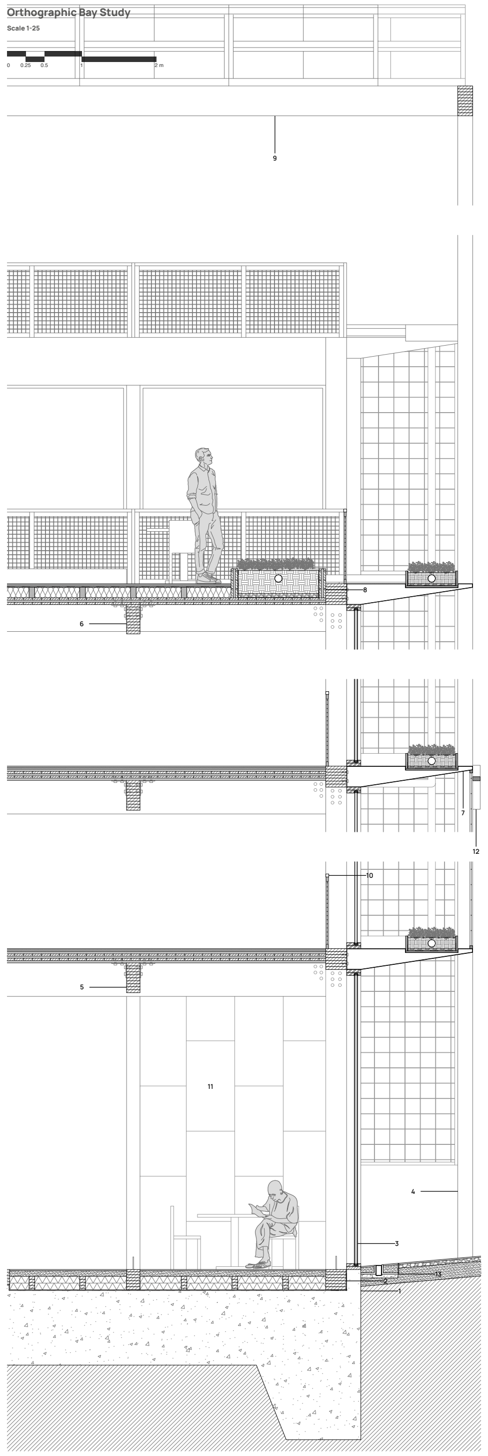


West elevation



West section





Axonometric Bay Study

1. Main structure
300x300mm glulam columns

2. Foundation construction
1000-2000mm concrete slab
1.5 mm membrane waterproofing layer 100mm two-layer hemp rigid insulation 75mm screed
16x400x400mm slate tiling
Weld steel plate connector
75x200mm glulam joists
Hardcore

3. Facade construction
150mm hemp rigid insulation 1.5mm membrane separating layer 20mm ash cladding

4. Enclosure Construction
Concrete pillar
Weld steel plate connector
200x200x5000mm glulam beam-to-beam columns

5. Solar shading construction
2mm galvanised tapered hollow steel cantilever
24x200mm marine plywood planter
1.5 mm membrane waterproofing layer

6. Internal floor construction
16x400x400mm slate tiling
24mm birch plywood separating layer 600mm glulam joist
Steel connector bracket

7. ACO drainage

Orthographic Bay Study

1. Foundation Construction
1000-2000mm concrete slab
1.5mm membrane waterproofing layer 100mm two-layer hemp rigid insulation 75mm screed
16x400x400mm stale tiling
Weld steel plate connector
75x200mm glulam joists

2. Ground construction
16mm slate tiling 50mm stone layer
200mm sand layer Hardcore

3. Facade construction
4mm 28mm gap double glazing
50x50mm aluminium window frame

4. Enclosure construction
Concrete pillar
Weld steel plate connector
200x200mm glulam columns

5. Internal floor construction
16x400x400mm slate tiling
24mm birch plywood separating layer 180x400mm glulam joist
150x3000mm CLT ceiling layer
Steel connector bracket

6. Insulated floor construction
16x400x400mm slate tiling
24mm birch plywood separating layer 180x400mm glulam joist
150mm hemp wool insulation
90x3000mm CLT ceiling layer
Steel connector bracket

7. Solar shading construction
2mm galvanised tapered hollow steel cantilever
24x200mm marine plywood planter
1.5 mm membrane waterproofing layer

8. Rooftop planter construction
90x400mm CLT planter
1.5 mm membrane waterproofing layer

9. Roof trellis construction
Photovoltaic array 200x400mm
Glulam joists

10. 1000mm galvanised wire mesh steel balustrade

11. 24x600x1200 birch plywood interior cladding

12. Galvanised steel sign 13. ACO drainage

Bay studies

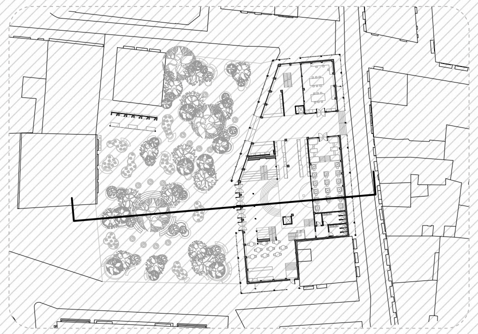
North Transverse Section

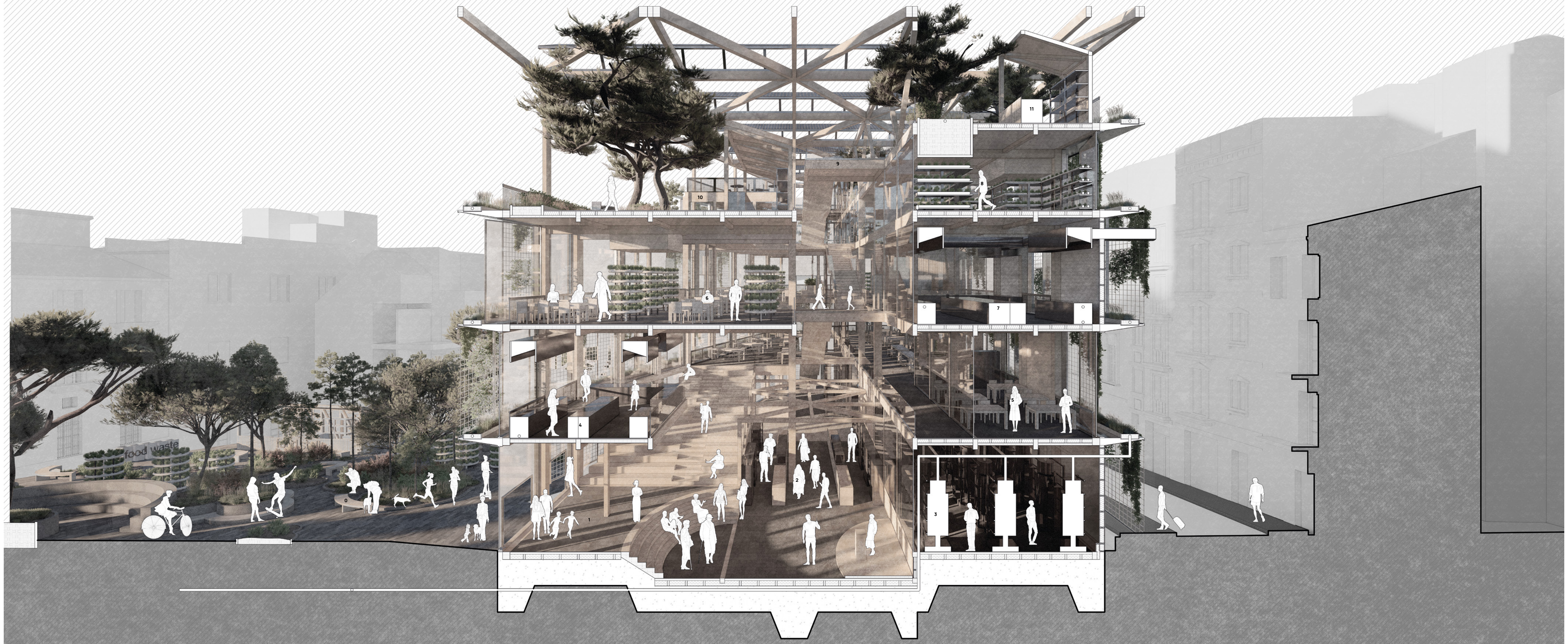
Scale 1:50

0 0.5 1 2 4 m

Programmatic Spaces

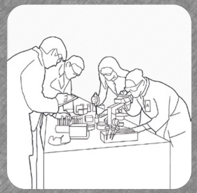
0. Community Garden
1. Entrance
2. Food Market Atrium
3. Cultured Meat production Facility
4. Experimental and Education Kitchen
5. Culinary Theory Classroom
6. Canteen
7. Main Kitchen
8. Hydroponic Farm
9. Rooftop Garden Terrace
10. Rooftop cafe
11. Rooftop Bar





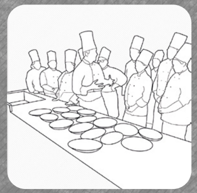
Research

Hydroponics Research

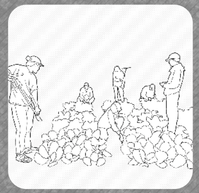


Cultured Meat Research

Research

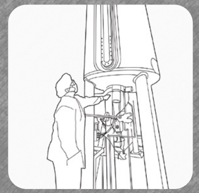


Culinary School

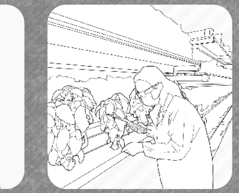


Community Growing

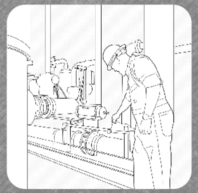
Research



Cultured Meat production



Hydroponic Farms



Biogas Digesters

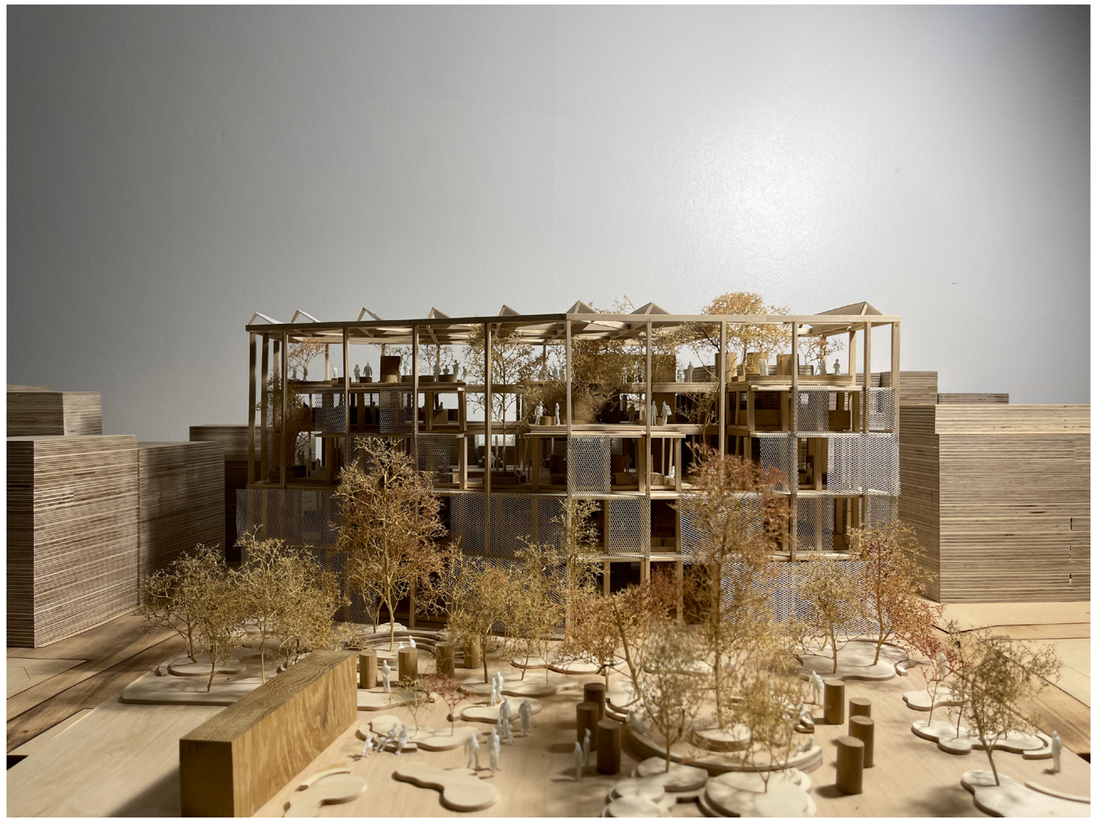
Research

Kitchen

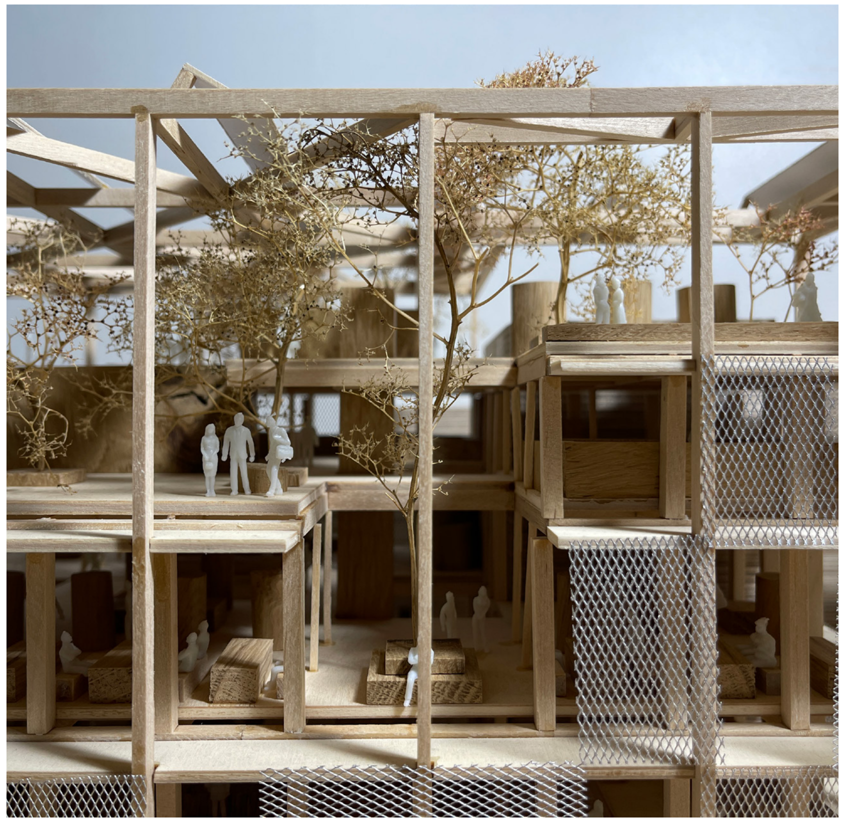
Food Bank

Canteen

Selected Works

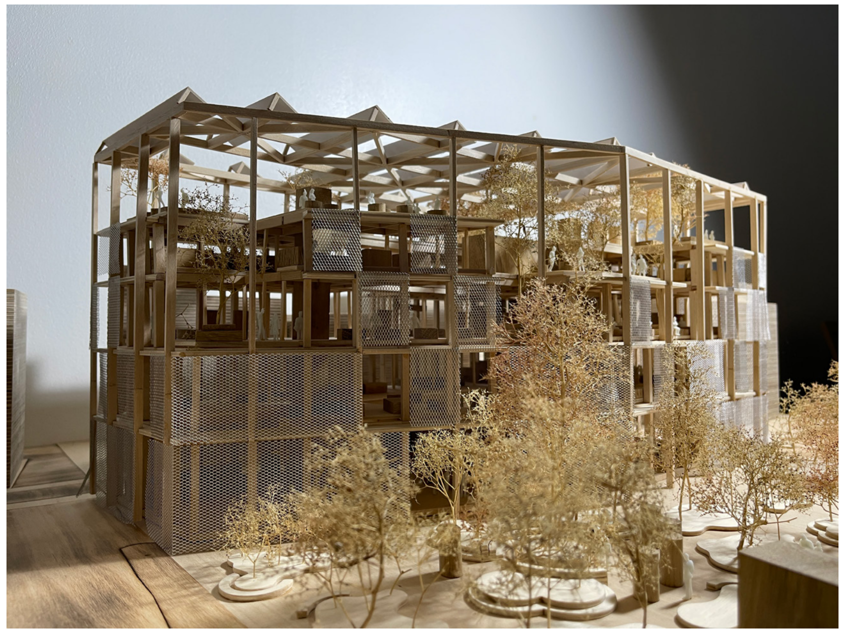


Front



Terrace view

Landscape eye-level view



South west view